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The Architecture of Concrete

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FERRO-CONCRETE is claiming an increased share in the production of buildings; of this we are duly informed by the regular and plentiful supply of illustrations by the promoters of various systems of construction.

We would acknowledge the interest and usefulness of this propaganda, but venture to doubt if their publishers are aware of the mixed emotions that the architecture illustrated evokes in our bosoms.

The factories, public buildings and bridges which at present form the bulk of the work executed in ferro-concrete can scarcely provide sufficient justification for a general discussion of the architecture of concrete, but they illustrate at least some of its practical applications at home. On the Continent, however, it is evident that a courageous architectural spirit has seized upon the possibilities, artistic as well as practical, of this novel substance and construction, and that results which can only be described as revolutionary have already appeared.

Further, the formation of classes for the study of ferro-concrete have sprung up in our Technical Institutes to meet the constant demand for expert knowledge, and the feeling is general in the structural engineering world that a Cement Age has dawned upon civilisation.

The late Lord Grimthorpe coined the ungraceful word " sticktion " to describe the service of mortar to brickwork; it is an obviously permissible use, and it is useful to us in considering one of the essential qualities of ferro-concrete, as it also thus defines a fundamental difference in the elemental principles both of design and design between walls and arches built up of blocks in courses and those made of concrete.

The consideration of the effect of this primary distinction in method is one of the motives of this

paper ; the idea of internal adhesion belonging to the material and producing homogeneity without anxious care must be novel, and of the nature of a relief to the constructor. Its attainment has always been his ideal, but the repugnance to the employment of concealed tie-rods is always manifested by the consistent tendency to rely either on trabeated or arcuated lines.

The new idea, as our French brethren have perceived, is revolutionary rather than evolutionary. It raises manifold questionings as to due architectural expression, and necessarily also it involves reconsideration of methods in the study of the practice of design,with the courses of training leading to its fulfilment. It would appear to be consequential, if we had not the experience of antiquity to the contrary, that a fundamental and new difference of constructive method must deflect the architectural expression of construction from the traditional motives of old methods.

Such expression is at least one of the primary causes of any architecture, though its caricature as decoration may survive and invade other materials and methods. To-day we are in the presence of a new process that is rapidly becoming general and therefore little apology is required for an attempt to discuss its manifestation in architecture and its effect upon our ideals.

The subject will be sketched under three heads :

1. The difference in constructive method and its expression in design.
2. The resulting architectural forms and the possibility and service of ornament.
3. The problem of education for the design of concrete architecture.

1. Differences in Constructional Method and Expression.

We do not propose to deal with the use of concrete as an imitation of stone in blocks, slabs or cast columns or arches.

Apart from the speculation whether such a use is justifiable, its results architecturally would be merely those hitherto common to all buildings ; in such the multitude of stones or bricks, piled up course by course, have each a relation to its neighbours that becomes the constant care of the designer.

This subject of concrete substitutes has no urgency to-day, and may be left to the tender care for economics that distinguishes the housing problem.

The architecture of concrete is that of a material dealt with in a fluid state, poured into and allowed to harden in moulds, which in the process are a temporary part of the fabric. The forms into which it ultimately hardens are created when it is plastic, possessing a freedom new to building processes, unknown to stonework and beyond the scale and scope of any moulded brick or terra-cotta. Its possibilities of entirely novel form are therefore many, and really terrify the tradition-loving imagination of the architect.

Combined with this initial plasticity and consistently secreted within, lie the reinforcements of steel rods, gathering up the tensile and shearing strains that rend the built-up wall of masonry or brickwork, thus dispensing with thickening piers and buttresses. Walls, even when not mere panels between piers, have a thinness that is unusual and which baffles the ordinary architectural conception of a wall, like boiler plate building.

The reinforcement does not dispense with articulation ; though it is not bare, as it may be in steel framework, it exists clothed with the concrete of the composite material.

It is not the least useful of the qualities of the combination of steel and concrete that an essential unity of structure results from the mixture of minerals and metal. The advent of concealed steel framing into walls used to be justified by the analogy of the human skeleton, and answered by the purists with the retort that the flesh had no structural relation to its bones. But the simile will now hold good and perhaps be carried further into the analogy of muscle and tendon which yield the beauty of form to the animal figure.

Ultimately, of course, the static result of the building is identical with that of the older forms of construction, though the architectural expression which depends so largely upon tradition is very different. The column and lintel of ferro-concrete still exercise the functions of those of the Doric Order, but with greatly extended range. Imagination and sympathy with Greek thought should not be alarmed by the suggestion that the Parthenon, if constructed of ferro-concrete, would only need one supporting column at each angle of the peristyle, and that the subtleties of intercolumniation may be dispensed with. The cantilever can now be constructed and employed with a certainty that opens fresh possibilities of adventure beyond those so laboriously and wonderfully developed in Indian

Dravidic architecture. As in bridge construction, it replaces the arch and dispenses with buttresses. Again the emotions may be perplexed by a dream of the vaults of Rheims, Amiens or Beauvais carried aloft without the external scaffolding of flying buttresses, as graceful and necessary to our minds as the peristyles of Greece, but it is evidently not only possible but as proper to employ the resources of ferro-concrete for imaginative architecture as masonry. The arch in ferro-concrete alters its nature ; to the Greeks it was probably but a subterfuge, to the Romans a constructional wonder known only in its semicircular form with its regular elliptical intersections; developed in mass concrete with brick reinforcements with an energy and success that may be considered as one of the most potent illustrations of an empire's character supplied by architectural history. But what would not the builders of the Pantheon and of the vaults of Maxentius and Caracalla have achieved if ferro-concrete had relieved them from the enormous burden of abutment ! The Roman genius that had established a new architectural beauty in sheer constructional effect, with proportions of strength and dignity undreamt of by the Greeks, may well be credited with revelations of the possibilities of ferro-concrete construction exceeding anything that even now has been attempted, either in the old world or in the new.

To the mediæval builders the arch became in its indispensable and marvel-working pointed form the fairy godmother of architecture. The whole development of vaulting is the constructional and artistic use of the pointed arch and the graces of tracery illustrate its virtues. But now as a constructional expedient or necessity the days of the arch are numbered, and it is doomed to the fate of its superfluous abutments. A pair of parabolic cantilevers may yield the aspect of the arch, and ere long produce new combinations, but as the fecund source of architectural effect the vault has, except in name, been superseded. With the disappearance of buttresses and walls of massive thickness how many cherished motives fade away ! In ferro-concrete, as all dimensions are settled by formulæ and mathematics, the empiric methods of masons and picturesque excesses of material are replaced by exactness of measure. Gwilt's deductions from the measurement of many buildings of the necessary thickness of walls are now as useless as the legal requirements of old Building Acts, and Fergusson's comparative tables of the relation of the total area of the piers to the whole plan of a cathedral become apochryphal. As the Eiffel Tower has replaced the Ziggurat of Babylon and already reconciled the second generation of Parisians to its proportions and grace, so we are also tardily conscious that the Forth Bridge is a work of art, though we cannot yet believe that a Thames bridge characteristic of the new age could be beautiful.

The effect of the difference in constructional method of ferro-concrete upon architectural expression appears to be cruelly destructive of the materials upon which architectural imagination and invention operate by destroying the *raison d'être* of the most characteristic features and their proportional relation. The new conception of substance as fluid when handled, slowly coagulating around muscular rods, reduces to absurdity the construction of obelisks or carved pinnacles. The evolutionary processes of building up and craftsmanship which underlie the interest of most architectural features having been replaced; all relation to a historic past ceases and historic forms originating in historic workmanship of solid materials become the materia of the anthropologist rather than of the architect.

Together with the structural revolution of architectural idea involved in the new method is the entire alteration of surface or texture, which plays such a subtle and valuable part in the harmony of artistic effect. Without the conception of masonry, with its interesting surface and intelligent jointing, a pyramid, a temple or a cathedral becomes a lifeless mass; one of the most considerable elements both of natural and human interest in the walls would be absent and the monuments of past art might seem only to have the interest of full size models of forms incapable of material analysis.

But we shall have to conceive a concrete architecture without joints, or their adventitious imitation as in the stucco palaces of West London, and we must honestly brace ourselves for the effort. Imitation of technique can only be occasionally justified as a decorative expedient when deception is impossible—as in the painted masonry of Gothic decoration or the rustications of Renaissance precious metal-work. In cement concrete it is a confession of weakness by the architect so that its mere absurdity cannot dignify it even if designed with humorous intent. The plea for the quality of

scale afforded by the subdivisions of jointing must be satisfied by other less invidious means than by imputing to a liquid the properties of a solid. The affectation of age and antiquity, such a besetting sin with architects to-day, is comparatively venial to such a contradiction of essence as relying upon the effect of masonry in a ferro-concrete wall.

The results of the discussion have up to the present been mainly negative. What are the more positive results of this revolution in constructional architecture? The losses seem ominous. Are there not compensating gains, is not the freedom from an age-long bondage to be welcomed, cannot artistic imagination conceive new delight in the expression of a construction wherein the increased strength of slender pier, long-bearing lintel and wonder-working cantilever shall be employed?

One of the first positive observations is that concrete building is economical only in the largest structures. The new material is proving its value in the competition with traditions in big rather than small examples. At first in the great retaining walls of wharves and docks, then in embankments and bridges, in the latter developing shapeliness that suggests architectural purpose. The erection in concrete of great warehouses and factories ensues, and ultimately buildings that claim attention in important places, and, therefore, a fuller consideration of appearance and harmony with public feeling, are employing ferro-concrete for external walls.

In these works, up to the last class mentioned, there has been no occasion to avoid the simple expression of purpose; in warehouse and factory building, on the whole, honest pride has proved successfully that the experiment of the new material solves unaffectedly the modern requirements of commercial building The attainment of mass without the adventitious aid of storeys of orders or mammoth cornices has been achieved as directly as in a Gothic castle of stonework. The keep and bailey are not more direct and grim in their expression of purpose than the many-storeyed mill or small arms factory with its daylight saving fronts.

The accomplishment of considerable buildings in concrete without any resort to the paraphernalia of stonework architecture is a step forward that we should pause to recognise. It is to be realised that our civil and ecclesiastical architecture, heavily labouring in the endeavour to revivify the dead, cannot be reckoned as the most characteristic building expression of our age. It only suggests that architects minister to the prejudices of unperceptive clients—but in our midst, upon a scale far exceeding in volume houses, churches and municipal halls, commercial building is marking our epoch with the factories and storehouses of imperial industry and wealth. Of the mass of this output the brochures of the ferro-concrete system proprietors are sufficient witness; they indicate the volume of the current, its direction and ultimate artistic or architectural import. Contrasted with the trade propaganda of Gothic church furniture in the last generation or with Ideal Home fitments of the present, each dealing with petty and subsidiary things, but all claiming artistic preciousness and so-called architectural style, how refreshing to the architect's advertisement basket it is to be fed with matter representing subjects of vaster scale and almost limitless extent, clothed only for the purposes of utility, and free from artistic affectations! Ferro-concrete has already provided those whose part it is to contemplate the progress of the arts of building from the external standpoint of contemporary architecture with a new conception of simple masses, self-reliant and highly expressive of purpose.

A further element is the advent to architecture, through ferro-concrete, of an originality that is consequent to the unusual material. The long drawn out desire for a new style may thus find its fulfilment safely and reasonably in the novelty of the substance and method of building. This originality is necessarily natural and unforced. It lies not only in perceiving the architecturalness of big commercial buildings and in obviousness of purpose, but in the new conception of proportion that ferro-concrete involves. The factors of architectural safety are no longer resident in the classic tradition of a stonework "order," originally based on the possible bearing of a marble lintel, with its column, architrave and intercolumniation, or upon the apparent balancing of an arch. These have passed away, at all events the logic of their application to concrete building has ceased. We are now accustomed, or becoming so, to any length of span, and, therefore, the relation of voids to solid, once a doctrine of design, is freed from stonework precedents —"the case is altered," and we must readjust our canons of design. It will be clear that if the conception of satisfactory proportion, based upon stonework building, is relative to precedent and not absolute ferro-concrete must create its own standards. It is, in fact, doing so by every example that frankly

employs its resources. A novel proportion is not of necessity bad, a lesson that Mr. Butterfield strove to teach the Gothic revivalists. If the new relation of dimensions is constructively sound, justification must ensue. The sentiments of the artistic heart will submit, in architecture at all events, to the judgments of the head.

This realisation of the possibility of deliverance from ideal proportions established in masonry by the substitution of a new material is the taking of a very considerable step in the path of architectural progress. It is indeed more radical in its advance and possibilities than the emancipation of English architecture a century ago from the thraldom of the classic tradition by the awakening of romanticism and the revival of Gothic. Within the sphere of those buildings to which on account of their size ferro-concrete is applicable, and these are the largest, the revolution of architectural ideals must involve a readjustment of ideals in design that is searchingly fundamental.

A final positive gain to architecture in the advent of ferro-concrete is the new spirit of artistic and constructional adventure which the elasticity of the material and the novelty of its applications reveal. The inventive genius of designers has always striven to bend the columns of its masonry prison and over-balance its walls. Apparently, that is, to old-fashioned sight, ferro-concrete laughs at the laws of gravity, just as the architects of the baroque rejoiced in an exuberance of fancy that playfully but unnaturally twisted the members of the classical orders into acrobatical energy. What would not Bernini have done in ferro-concrete ? is a question that may be mated with, What would not Brunelleschi have achieved ? Examples are already at hand of first steps on the upward or downward road of freedom or dissipation ; on these we do not at present dwell, but the door is opened, the designer is no longer in a stonework prison. The first freedom should be dedicated to exploring and exemplifying frankly the new characteristics of virility and adaptability which lie in the material. It will be a service demanding courage as well as clear-sightedness, but it is demanded in order to pave the way for the recognition and establishment of the new conceptions of architectural proportion which the use of ferro-concrete has introduced. The dead hand of the past has been lifted from architecture, renaissance is no longer its aim ; like the philosophers and artists of Italy in the Cinquecento we are marching to a dawn, but it is not of the long-set sun of classical precedent, it is in the light of an entirely new science of building that glorious adventure is to be sought.

2. Architectural Forms and Ornament.

The question now will be asked, are the new and special qualities of ferro-concrete building sufficient to provide a satisfying architecture, and if not, for they will not supply the modern designer with either decorative ideas or forms, from whence can he bring material if denied the architectures of masonry or brickwork ? Is it to be expected that this new plastic wall substance will forthwith put forth its own characteristic flowering and in a generation accomplish that for which centuries were requisite in all other historic architectures ? The answer is not as obvious as it might appear to be. " The heir of all the ages " has but recently believed himself qualified to design with Greek, Roman, Gothic and Renaissance spirit, and, in fact, the class rooms and studios of the educational hothouse have cultivated this conceit with some effect. But we must, for the present, leave on one side the provocative subject of historic style, and insist upon the cleanness of the slate whereon the fresh concrete style is to be planned. Can architecture spring out of mere novelty of construction ? Will the elemental qualities suffice to give interest and avoid the importation of extraneous and affected ornamentation ? The qualities that we have already observed to characterise ferro-concrete building comprise a new largeness or freedom of scale, simplicity in directly expressing purpose, originality of treatment, a novel standard and sense of proportion, and the but partially explored possibilities of constructional adventure in design which are not attainable in materials that are wrought when solid.

With such elements and potentialities the architect may begin his consideration of the problems of improvement to which his office appertains. He should primarily recognise and perhaps emphasise the special qualities and purposes of the building and its construction, at all events not dissemble with them as if they were antagonistic to his ideals. He can bring organisation to bear upon the masses of the building by simple symmetrical arrangement, itself the first evidence of civilisation in evolution, balancing and gradating projections both on plan and elevation, in due regard to the premiss of utility. Or by the emphasis of

parts mould irregular masses into picturesque groups of contrasting forms ; for by taking thought, intelligence, or idea, may be imparted to a chaos. Contrast between the horizontal and vertical direction of storeys may be secured and marked by the arrangement and division of openings in the wall. Piers and beams may be expressed as they are necessitated by the construction without other artistic interference, the problems of proportion being left, as already indicated, to the structural engineer, and finally the peculiar outrages upon the ideals of an architecture that knows only stone or brick should be emphasised without modification for the instruction of the ignorant and the furtherance of a standard relative to the peculiar genius of the system of structure. Such suggestions might be multiplied ; they are but general ; each building will furnish its own opportunity for design, but provided that intellectual interest is manifested it may be confidently asserted that artistic result is assured and the path leading to architectural success entered upon, though in a hitherto unexplored territory.

It will doubtless be felt that these proposals, by dealing only with the abstract elements of architecture, still leave the designer without material ; the laws of grammar, the arrangement of parts of speech are of little practical use without a vocabulary, and unless the architectural orator is permitted to employ a language, whether Egyptian, Greek, Italian, French, or English, understood by the eye, he is invalid and helpless to exercise himself. This will be readily admitted for the purposes of argument, but with the reminder that other constructive arts such as shipbuilding have evolved beauty without any presumed reference to antique models. It may even be suggested that the initiation of many great architectural developments has taken place without reliance on artistic precedent. From whence came the Pantheon Dome or the Gothic Minster ? The initial debt in each to architectural parentage is indeed small in comparison with their development.

But the value of historic reference will be freely admitted, even for ferro-concrete, with the purpose of tracing the sources of architectural forms which have become sacrosanct. The sloping walls of the Egyptian pylon with its reeded reinforcements at the angles and cornice, if not the cavetto or gorge itself, are reflections in syenite of a prehistoric and sacred tradition of ancestral reed and mud architecture, the terms of a primeval reinforced concrete transferred by painted representations to later ages of advanced building power. A translated future may await the unabashed directions of ferro-concrete construction and yet excite undesigned æsthetic emotion. In the forms employed by the Greeks for their glorious sacred buildings an intelligent archæologist discerns under the beauty of the marble an original idea alien to the material and its constructive method. And Rome, so modern in its use of architectural ideas, has left us structures in which we disregard the laboured applied features but gain inspiration from its vaults and cofferings freely adorned with stucco.

Mediæval England, in its virility and insularity, reveals, in what we call its Perpendicular phase, a consistency of decorative idea coupled with a determined and successful reduction of walls and piers to their minimum for stability. Each historic epoch or style will yield inspiration to the student who earnestly seeks to impart something of his own, of himself, to a design for execution in a new material.

Perhaps the way may be opened for expressing an architecture of ferro-concrete in what we call a historic style. I do not think this is to be desired, but the attempt should be made to imagine what a Theban, Athenian, Roman or Gothic builder would have done, in his simplicity or with his traditional ideas, if faced with the problem, so difficult to a modern designer, of conceiving a ferro-concrete building architecturally without affectation. History will yield analogy, but scarcely example. It may be urged that ornamental plasterwork is practicable all over the surface of a concrete wall. It is indeed possible that we may suffer from the delusions of architects expressed in concrete, as we have to sometimes in more ordinary materials, for it is evident that no restraint appals or limits the imperious necessity of advertisement in prominent situations. It should be remembered that the charm of Elizabethan ribbed or strapwork plaster ceilings is largely due to horizontal lighting and freedom from dust. We may feel fairly sure that only one or two experiments on vertical fronts exposed to the weather and grime would be needed to deprive the idea of using them as a type for wall decoration of any popularity.

Dismissing from consideration the reproduction of masonry features, as well as the historic

craftsmanship of modelled plaster work, some provision must be suggested for the eager artist who may have an important site for his production.

The crux is detail and ornament; novelty of material and proportions are provided, and the purpose of the building will be expressed by its general shape. The student may be recommended to rely upon his studies. If Greek, Roman, or Gothic, the characteristic adaptation which each employed, when decorating one material with forms derived from another integrally and structurally different, will afford a clue and starting point for scholarly advance in the new material. We cannot and need not begin in ornament, any more than in literature, as if we had no past and were originating truth. What we may call decorative instinct will always be required, but the advice may be pressed to master the thought of a great epoch in architecture rather than its forms, and with its motives duly comprehended proceed to do as you believe the masters would have done. It may be that some human sculptural interest may be at your disposal. A little figure modelling on a flat wall will go a long way, and the architect will then be content to waive the special interest of architectural enrichment on behalf of the greater art of sculpture.

The treatment of surfaces by providing a texture of finish for the concrete, suggests possibilities that may be at once economical and interesting. Rural plastering furnishes many picturesque examples of fancy pricking, graining the plaster with a tool much as a painter used to. Sgraffito can be revived; it would ennoble the whole subject of concrete architecture if exercised by the efficient designers who certainly exist among us. A rich field in the Italian art lies at the hand of the artist. Something also may be said to indicate the possible field for mosaic or ceramic inlays on a concrete façade. It may be confidently suggested that a coat of such facing material, less than an inch in thickness, will prove to be much more economical of cost—as well as space—than the clothing with stone or brick that ferro-concrete buildings in cities now adopt. Therefore cover the whole surface with mosaic if you intend to use it at all. Treat the design as a rich garment of pattern and colour, bordering the elevation as you would a tapestry, carpet it vertically and escape from all the implications of false structure in your idea. The possibilities for street façades are such that one would wish for a ferro-concrete city faced with mosaic, brilliant in colour, clean and ever fresh, and by its existence founding a school of mural artists who would take a share, never yet afforded to them in England, in making our streets joyously beautiful to all who pass by.

3. Architectural Education in Relation to the Design of Ferro-Concrete.

The scientific or constructional aspects of ferro-concrete building are, on all hands, dealt with; the subject is interesting and lends itself to text-book and class instruction, and as the demand for trained specialists for engineers and architects' assistants increases the constituency of students grows. The schools of architecture either directly or indirectly through association with schools of engineering provide courses for architects in this single aspect of the great subject.

But it has not yet been realised by the Board of Architectural Education of the Institute that its examinations, which provide the syllabus of study in all the schools that it recognises, have no knowledge of the essential truth that training and exercise in the art of building in stone or solid materials is of little or no artistic service to the architect in ferro-concrete. It must be emphasised that the responsibility of the Institute in this matter is the more considerable as in practice the professional teachers of architecture throughout the sphere of the Institute's examinations, which covers the British Empire, do not extend their outlook much beyond its syllabus. To put the problem bluntly, what good will the laborious study of the orders of stonework architecture be to the practitioner in ferro-concrete? The effect of such wasted study is misleading both to the student and to the public and ultimately is inimical to architectural progress.

The case may well be supposed, in fact it exists, that engineering students of ferro-concrete construction desirous of some acquaintance with the principles of architectural design seek the assistance of a school organised on the basis of the Institute examinations. The discovery must then be made that the educational system has become so detached from practical work and reality that its provision for students of the art of concrete architecture is naught but the basis of Vitruvius with an appendix on the Gothic Revival.

That this is no caricature the intermediate examination papers of the Board will make clear.

It is necessary as pertaining to the subject of the Architecture of Concrete to consider the greatness of the opportunity which is now opening before us for an advance that shall be general in the study of the essentials of architecture, of its relation to constructional progress and to artistic criticism and analysis. It will be lamentable if the lamp of progress passes entirely in building from the hands of architects to energetic constructional firms and their engineers. Architecture long ago, say about the time of the erection of the 1851 Exhibition, lost the opportunity of including iron structures within the art—the prejudices of Pugin and Ruskin had not a little to do with that—and the British engineers since then have carried the standard of progressive construction. In the advent of ferro-concrete a new opportunity may be hailed for architecture if the leaders of the profession are at all conscious of the universality of their art. The opportunity is not merely that of becoming constructors but of leading an authentic development of building practice, along the paths of organised study with artistic discrimination and enthusiasm as it rapidly grows in usefulness to the world. This awakening of the profession of architecture from the curious dreams of the Renaissance and revivals to a new view of that ever-living present which, in spite of all traditions, insists upon its urgency and in which our responsibility cannot be evaded, may arise from the necessity of preparation by education and practice for that Architecture of Concrete which has come upon us to search and reorganise our ideals.

Discussion

(MR. EDWARD P. WARREN [*F.*] IN THE CHAIR.)

Sir E. OWEN WILLIAMS, K.B.E.: It has been my privilege to read this excellent paper, and it is my greater privilege to propose a vote of thanks to Professor Pite for a most thought-provoking contribution. I think perhaps I may be permitted to summarise my view of his paper in saying that he does not wish to be dogmatic, he simply wishes to invite criticism and thought on a new subject. The title by which the paper was announced was "The Architectural Treatment of Reinforced Concrete," but in my proof I think the title is improved by being worded "The Architecture of Concrete." To me, the word "treatment" seems to suggest that the material requires a doctor; and I really think the material does require doctoring, as we now know it.

It is interesting to follow the path by which reinforced concrete has acquired this stigma. Why has reinforced concrete fallen into architectural obloquy? It is a material which was new, and required new methods to exploit; and, so far, it has been exploited on one basis only, and that is the basis of first cost. Very few designs in reinforced concrete have been constructed in which the criterion of first cost has not been the only consideration. I think, really, that architects are largely to blame for that. They invite competitive designs for a structure; engineers in conjunction with contractors provide designs on the basis of money, and the result is a very spindly construction. Then architects say, "This is a material which defies all the canons of architecture." I maintain that if you put out to tender on the basis of design coupled with cost, you will be staggered at the dimensions to which engineers will reduce brick columns. Then, I suppose, the architects would say, "This looks very skinny, I shall have to put more brickwork round these columns," and they would put it without bond, and the result would be a sham. Most reinforced concrete buildings to-day are skinny, with sham treatment to give them the appearance of robustness which they do not really possess.

The early history of reinforced concrete has the advantage, however, that we had to start from zero; we know what is the minimum amount of material which can be put to do the job from the point of view of first cost. After that, other considerations will come in, such as the matter of permanency, the matter of beauty. From the zero start can be built up a structure which is not a building of affectation, but one which has grown into a robust state of health by a process of evolution from zero.

The last slide showed a very good example of the early defects and failures of reinforced concrete, for in it we saw a roof constructed in reinforced concrete simply as a copy of a timber roof. Concrete should be used so that its peculiar properties are utilised. It can be made to copy existing forms—it is the obvious thing to do, to reproduce the beam and the slab, because we have been making beams for centuries. But concrete can do things where no beams are necessary. And that is the future of reinforced concrete. Its own peculiar properties should be evolved.

Professor Pite referred to the technique. The only foundation for technique of a material is, of course, practical observation of its processes. He takes exception to horizontal courses and rustications. It is a practical part of the construction of a concrete wall that no more than 3 feet of concrete should be deposited in one day; otherwise excessive pressures are induced upon the shuttering. That means that, whether you wish it or not, at every three feet in height of the wall there must be a line. It may be a poor line, or an irregular one, but it is a joint between two days' work, and I maintain that some treatment is necessary to cover up the joint. I do not say that rustication, in the sense of a copy of masonry joints, is desirable. I am inclined to think you could have lift courses—that is, that every lift of shutter should be at an angle, so that you had a definite horizontal shadow at every joint.

Another feature like the horizontal joint—the two go together—is the expansion joint. The monolithic character of a concrete building is over-stressed. It is not a building without joints. Whether you want them or not, you will get either cracks prearranged, or cracks not prearranged. The desirable thing is to have a vertical joint every 40 feet from the horizontal. Then you definitely make the structure move and breathe at that particular point. It should not be more than 40 feet from the next, preferably less. Vertical joints are not peculiar to concrete. The change from lime mortar to cement mortar also means that brickwork acts in the same way. The change from lime to cement is not simply a change in the specification, it is a change in the nature of the material. Brickwork in cement is a concrete in which the bricks are prearranged aggregate, and bound by cement. A brick-work wall built with half cement will also crack every 40 feet. It is a change from individual units into units bound together and forming a homogeneous and cohesive mass. So the problem of expansion joints is also a problem in cement brickwork.

Throughout Professor Pite's paper I find that he has discarded arches; he feels that arches are no more. I have a very definite opinion that the only permanent structural element is the arch. It is the only member in which tension can be eliminated, leaving only compression: that is to say, that the structure then depends entirely on the force of gravity. The introduction of tensile stresses into a structure introduces disruptive forces. The introduction of steel into concrete presupposes tensile stresses, the introduction of steel also means corrosion. Professor Pite imagines the ancients using reinforced concrete for monumental buildings; I feel they would never have used reinforced concrete for monumental buildings. The function of reinforced concrete is as a commercial expedient for the production of cheap buildings, to last a period not exceeding 100 years. But that is only in common with all the modern expedients such as steelwork, or any structure containing steel. But I think that, had the ancients known the secrets of concrete as we know them, they would have built in concrete without reinforcement, and that they would still have built in arches, and that their structures would have appeared no less robust than they do now.

Professor Pite refers to the leaving of the proportions to the structural engineer. I suggest to the Institute that when they leave it to the constructional engineer they should not leave it to him on the basis of first cost.

I have great pleasure in proposing this vote of thanks.

Professor W. ROTHENSTEIN (Principal of the Royal College of Art): It gives me particular pleasure to second Sir Owen Williams' vote of thanks to-night, because the much abused title of Professor justifies itself when you get, say, one of Professor Pite's long experience as a teacher, sharing such vision and sympathy with a new vision. It would seem that the adoption of the academic robe, which Professor Pite wears in so dignified a way, serves rather to rejuvenate than to chasten enthusiasm. No one who has seen the pictures which Professor Pite has thrown on the screen can fail to see a new hope in the intelligent and honest use of new materials, and a new system of dynamics. If artists and craftsmen are to co-operate with this new form of architecture, I hope the old system, of asking them in at the last moment to co-operate with the building, very much on the cheap, may not be carried into the new system. If craftsmen are to serve, they should be paid as honestly as the plasterers, the bricklayers and the carpenters. If, however, you adhere to the old sham-applied ornaments, it matters little whether they serve new masters or old. I was touched when I heard Sir Owen Williams' appeal for something other than the usual cheeseparing contract.

When I saw the slides, I realised that to-day, as always, the arts are indeed one; and just as you had the same forms in the 14th, 16th or 18th centuries in painting and sculpture, that precipitated themselves into the shapes and construction of buildings, so to-day, a movement similar in character to that just illustrated on the screen is shaping itself in the world of design, of painting and of sculpture. I feel that this new orientation of the arts, which seems so unsympathetic to many who prefer to look back lovingly, and wistfully, to the past, should appeal strongly to the builders, architects and engineers who are shaping new forms in concrete and iron. I second most heartily the vote of thanks so ably and generously proposed by Sir Owen Williams to my old friend and colleague, Professor Beresford Pite.

Mr. MAXWELL AYRTON [*F.*]: I have listened, as I am sure we all have, with interest to the paper. It seems to me that years ago the traditional use of such materials as brick and stone were destroyed by steel frame-work, and that instead of holding reinforced concrete to blame for this—and possibly being afraid of it from that point of view—we should welcome it as the only possible material which can meet modern demands. In great commercial buildings we have long since lost any real sense of stone and brick, and here we have a means of building with real sense in a new material. The trouble so far has been that reinforced concrete has only been used by architects merely to replace steel framing, and it has not been used conscientiously in the building as a whole. Only when we get down to it, and use it in its own nakedness and trust to the concrete itself as the finished building, shall we do justice to reinforced concrete.

Some of the slides shown to-night are obviously not of reinforced concrete buildings; covered with plaster or stucco their construction may be of any form. A real reinforced concrete building must be concrete and only concrete. If we are going to cover it with plaster or with mosaic we are shirking the problem and are no further forward.

I feel with Sir Owen that we should not stress too strongly the fine exactness in dimensions possible in reinforced concrete. Very few of us, if we are designing a stone column, calculate the exact area of that column, and reduce it to the load it will safely carry. If we want a 2-foot column, we have it, considering it only from the point of view of design. A reinforced concrete column might do with a 6-inch, but why should we sit down and imagine that in future we have to design spiders' webs? It is not fair to the material. That feeling has arisen from the fact that up till now architects have used reinforced concrete merely as they use steel framing, to be covered up as quickly as possible, and so long as we do cover it up we shall not be getting any "forrader." It is only engineers who have had the courage to use it as architecturally as they can; and it is for us now to get down to it and see what we can do, treat it seriously and generously, or we shall lose all the work which is going in that direction.

One of the firms whose work we have seen to-night produces a book which shows that they have built some 500 bridges in the British Isles in the last twenty years. There are several other such firms, and there is no question about it that the majority of them are dreadful architecturally.

I feel very strongly that this is a science which architects can never hope to take over entirely; it is far too complex and scientific a business to be thrown in as a side issue of an architect's work. But its use should have this great benefit, that of bringing architects and engineers more closely together, a thing very urgently needed.

Mr. A. R. SAGE, M.B.E. (Principal, L.C.C. School of Building, Brixton): I sometimes wonder whether, in dealing with reinforced concrete, the architect and the constructional engineer are divorced. If we can find a bridge by which they can work in close harmony, we shall eliminate some of the difficulties under which we labour in connection with reinforced concrete.

In the paper, Professor Pite made use of the simile that grammar would be useless without a vocabulary. I take it he meant that grammar should occupy a place somewhat similar to architectural style, and the vocabulary should be the parallel of the building. If that is so, I suggest that in languages the vocabulary came first, and then grammar was built up on the vocabulary. We can follow that idea further. If we take our reinforced concrete buildings as forming a vocabulary, and from that build up our laws of construction, we may evolve some artistic style in reinforced concrete buildings. The fact remains that the modern building has given birth to a child of which it does not seem to be particularly proud. We have the option of destroying the child, or making the best of a bad job and clothing it. I think it is best to put up with it as it is, and it is to be hoped that each succeeding child that is born will be an improvement on its predecessor. I think the time will come when a child will be born which will rival the Greeks in beauty and grace, and will be able to stand naked and unashamed. In the meantime, we clothe it, put it in some form of plaster.

Mr. W. J. H. LEVERTON [*Licentiate*]: I was pleased to hear Mr. Ayrton's remark that in designing in concrete there is no need to skin the building to the minimum. There is no reason why the architect should not state the proportion. It does not follow that because of that he will spend more money on it, because if you have a big column instead of a thin one, you need not have so rich a concrete; so the chances are that your big column made of poor concrete will cost no more than a thin column with rich concrete, and the architectural effect will be finer.

Dr. J. W. MACKAIL: I am not in a position to speak at length on this important subject, but there is one question I would like to ask, on a matter which troubled me a little during the interesting address which we have listened to. It is this. Professor Pite appeared to draw a sharp distinction, as regards the use of ferro-concrete in architecture, between large and small buildings; that is to say, he appeared to regard ferro-concrete as a suitable substance for the erection of large public buildings: warehouses, bridges, etc., but as unsuitable for ordinary domestic architecture and for buildings of a smaller sort. If that is so, it seems to show that there is a defect somewhere. Otherwise the whole thing should not be separable into these

two methods. If any inference is to be drawn from the slides which were shown, it is that the application of the new material and the new method to the construction of small houses, even cottages, is as effective for its particular purposes as its application to large buildings, of which we were shown several examples. That is a point on which I would like a little more light thrown, if possible.

Sir RICHARD S. PAGET, Bart. [*Hon. A.R.I.B.A.*]: There is an essential difference between the architecture of the future and that of the past, and that is in the economy of human labour. In the past, architecture was based on the use of slave labour; but in the architecture of the future, I suggest, very much the same considerations will apply as in engineering. No one would think of adding ornament to a locomotive, for instance, because if such an engine is made heavier than it need be, it will be less perfect for its function. I imagine that in the future you will attempt to make your structure not only beautiful, but as economical in human labour as you can. That is to say, you will fine it down, and the measure of your success in fining it down will be one of the chief elements of beauty in the structure.

Professor LIONEL BUDDEN [*A.*]: When I came here to-night it was with no intention of speaking, but Professor Pite stated that the vision of the constructional teachers in the schools of architecture was limited and determined by the examinations of the Royal Institute. I submit that that is not the case. If, in the first instance, teaching in schools of architecture did not go considerably beyond the Institute's examinations, the Institute would not be justified in delegating the qualifying powers which it has to these schools. Professor Pite, I think, caricatured the teaching of construction as given in the schools. In the first place, all constructional work in the future is not going to be work in reinforced concrete; much of it will and must be in brick and stone, and instruction in that must still be given in the schools. But the suggestion that the schools do not teach steel or reinforced concrete construction is a misrepresentation of the facts. To say the schools are unaware of this revolution in concrete, or that they are ignoring it, does not represent what is happening. I have not an intimate knowledge of more than one school of architecture, but I have indirect knowledge of the teaching carried on in two or three of the larger schools; and in all of them advanced steel work considerably beyond the standard of the Institute Final is taught, and advanced work in reinforced concrete. The evidence of that was exhibited at Devonshire House at the International Congress on Architectural Education last summer. I heard practising members of this Institute, on looking at those elaborate working drawings, say, "It is all very well for these students to work these things out in detail, I suppose they have time for it, but when they get into practice they will find that this kind of thing has to be pushed on to the engineers." I think that is a sufficient reply to the suggestion that teaching in reinforced concrete and constructional steel is neglected in the schools of architecture.

The CHAIRMAN: I also have been enormously interested in Professor Pite's lecture; but he did not mention the fact that reinforcement, even metal reinforcement in concrete, is no modern thing. It was known by the Romans, and was used in the Baths of Caracalla, where you will see iron used to reinforce it. And reinforcement of various kinds has been habitual in sculptures, in plaster casts and bronzes, at the time of Cellini and even before that.

I do not propose to give you my views on the subject of ferro-concrete, but there is a middle view to be taken between extremists like Mr. Ayrton, who thinks that ferro-concrete should be shown for its own beauty, and the suggestions of Mr. Pite as to clothing. It is a question of choice. Where the surface of concrete has its right architectural effect unadorned, show it; but where you regard your concrete merely as a basis of the effect you want to get, why not use it that way?

The vote of thanks was then put to the meeting and carried by acclamation.

Professor BERESFORD PITE (in reply): I beg to thank you most cordially for your patience and for your vote of thanks. My friend Professor Budden has completely misunderstood me. I acknowledge in my paper, twice over, as he will see when he reads it, that the technical teaching of ferro-concrete is pursued in the schools, and most industriously.

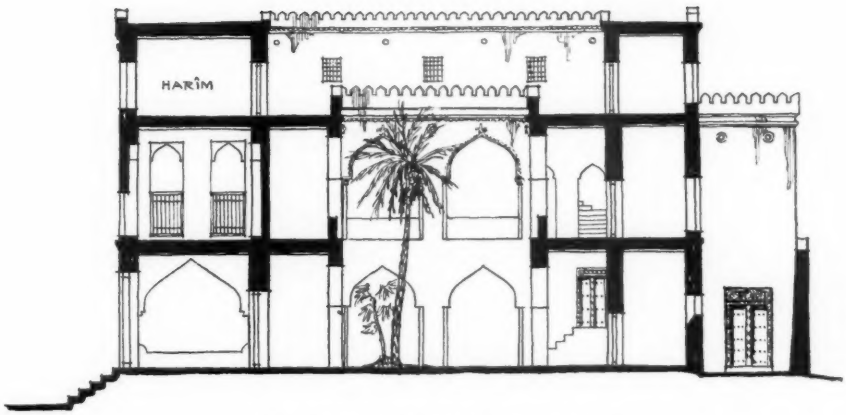
Sir Richard Paget's remarks about slave labour in connection with architecture in general, and the way in which we have got to the other end of the extreme, are exceedingly interesting. Mr. Sage, last week, had a demonstration of a thousand students, and the President of this Institute went down and distributed the prizes. When the votes of thanks came to be proposed, there was a glorious tilt between a master-builder and one of the organisers in the Trade Unions, which lifted the atmosphere into the electrical zone. Our friend the Trade Union brother waxed very eloquent on the glories of ancient buildings and the wonders of Roman art, and how the men of the present day ought to have the opportunity of cultivating this. How touching it is that the real monuments by which the world is inspired to-day, whether in India, Egypt or Rome, were erected by unpaid labour. We have to economise labour, and the value of ferro-concrete is, of course, its economy.

I do not want to see as much concrete as I can, I want to see as little of it as I can; it is not as if it was precious marble.

With regard to Dr. Mackail's point, probably I did not make it clear that at the present moment we find, practically, that ferro-concrete is only economical in large buildings. In all the troubles over housing we have not had put before us any scheme for employing ferro-concrete. We have left concrete blocks out of consideration ; they are a very considerable substitute for brick and stone blocks. Ferro-concrete demands a large and great building ; and just as one would deal with the architecture of granite, the architecture of Egypt without reference to smaller buildings, so we deal with this substance.

I am much obliged to Sir Owen Williams for the careful and diligent criticism of the paper, and for the very interesting and important remarks he made on the subject of joints of expansion. But he misunderstood me if he thinks I have any objection to any expression in the building of the nature of the material. It is for that I am pleading. If you want a lap joint at the end of every day's work, the architect ought to know it and ought to express it. And if you want a vertical joint on maximal lengths of 40 feet, it should be expressed. I learned, many years ago from my friend Mr. Mansard, that there were expansion joints in London Bridge. He said, " Do you think that with the sun pouring down on that bridge a quarter of a mile long there would not be expansion joints ? " I helped him with the architectural trimmings of the Birmingham Waterworks Dam, where there is a great wall without a joint in ; but the risk of a joint with all that weight of water was too enormous. The expansion joints were at the far end, where the great dam expanded in the hills on each side.

The more light, knowledge and intelligence that architects have on this subject of the action of concrete the better, and the expression should not follow the myth of rusticated masonry, which is a cheap-jack motive. It is the rascality of masonry which has become a virtue by reason of its hoary antiquity.



SECTION · OF · ARAB HOUSE

The Arab Architecture of Zanzibar

BY P. C. HARRIS [*A.*], ARCHITECT IN THE PUBLIC WORKS DEPARTMENT, ZANZIBAR.

THERE will always be romance associated with the name of Zanzibar, which, though now indicating only the island protectorate close to the East African coast, at one time included the whole "Zenj" empire roughly comprising the island of Zanzibar and Pemba and a coastal strip of the mainland as far inland as the rule of the various governors extended.

A brief survey of its history is necessary to understand the comparatively unpretentious monuments of this outpost of one of the great schools of Islamic architecture. Though known before the Christian era to Greek and Egyptian navigators and, it is thought, to the Sumerians, it appears that it was not until after the settlement of the Oman Arabs in the seventh century A.D. that the island and coast became the famous emporium from which were shipped spices and negro slaves for Baghdad and cities of Arabia. Since then the islands have suffered incursions of various negroid races, Persian settlements in the eleventh and twelvth centuries A.D. and a short but troublous Portuguese rule early in the sixteenth century.

The British association with Zanzibar island dates from 1591 with the arrival of the *Edward Bonaventure*. The subsequent chequered history under various Sultans differs little from that of other eastern states. After the suppression of the slave trade in the last century the island has secured most of the trade of the world in cloves.

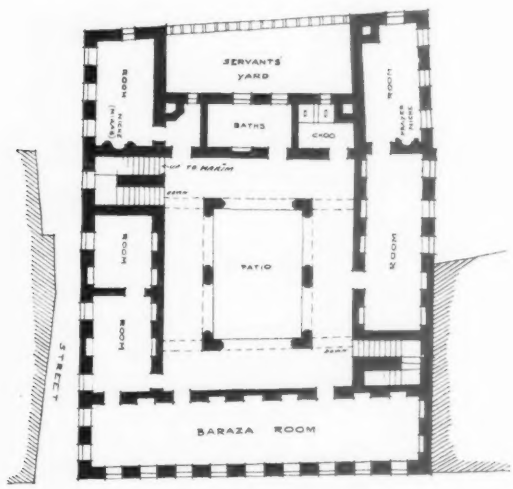
Of the later events none have much influenced the architecture except the immigration of Indian artisans in the last century.

From the long association with the Persian Gulf it is natural to find here one of the ramifications of the school of Mesopotamia and Persia, not the least interesting of the five great schools of Islamic art. This school seems to have borrowed largely from Assyrian and older traditions and the work of the Sasanid dynasty A.D. 226–641, which is evident from the study of Arab buildings in those countries. It is to be regretted that in Zanzibar the lack of durable building material and the destructive power of tropical vegetation should have obscured so much history and left us few buildings of more than antiquarian interest.

The Arabs are often accused of having brought to

their dominions little but the scimitar and Qur'ān, and having served the arts merely by employing native artificers to adapt to their needs the styles of the conquered. They have always, however, clothed all borrowed styles with their own characteristics without disguising origins. This Arab character in the work of Zanzibar thinly overlies forms very reminiscent of Assyria. This idea is borne out by the frequent use of rosette and conventional palm ornament, and in the use of square indented battlements and stunted obelisk shapes.

The only available building materials were coral



PLAN AT FIRST FLOOR

ARAB HOUSE

rag, used as rubble, set in a mortar of lime and red earth, which requires plaster to exclude rain and vegetation, and short mangrove poles " boritis," wherewith to ceil the long narrow rooms thus resulting. On these " boritis " loose stones were placed and above lime concrete of coral aggregate to a depth of eighteen inches or more, thus forming floors of flat roofs. This construction is traditional and still in use, though in places tentative domes and waggon vaults exist.

There are about the island ruins of walled towns and once important strongholds of considerable extent, such as Tumbatu and Kizimkazi. These must in their day have been similar to the present town of Zanzibar, which is said to have supplanted a former capital further south, and claims no great antiquity as a whole. It is a picturesque town of narrow winding streets of Arab mansions intermingled with bazaars and graveyards, and is similar to the old parts of Mombasa.

There is in Zanzibar an old Portuguese fortress, now mostly ruinous, which has none of the rugged barbarity of the famous Jesus fort at Mombasa.

The typical house possesses a courtyard, around which are grouped the principal rooms, on the first floor for coolness. The top floor is given up to the harîm for seclusion and security, while the ground floor, lighted only by small barred openings, is given over to the servants. There is generally a Turkish bath and primitive sanitary arrangements consisting of one or more shafts carried down through all floors to a cesspit. On account of the permeation of sea water in the underlying coral this last has not proved as deadly as might be expected. It is popularly supposed that slaves were buried alive in the foundations.

Most of the ornamentation is lavished on the great carved doors, generally of the wood of the Jack fruit or of imported teak, of which the many hundred examples are admired by visitors. These doors are often of fine scale and seem to have indicated the prestige of their owners. The rows of sharpened studs with which they are adorned are a decorative survival of more picturesque days when a door was forced by driving infuriated beasts against it. The central carved locking post, of which the origin is problematical, is securely fixed to one leaf of the door, and may have served for greater security. Quotations from the Qur'ān on the frieze and a surrounding moulding of carved chain are said to have debarred the entrance of evil jinns. Rosettes and variations of the " traveller " palm are the most frequent motifs for the carving of the jambs and architraves which springs from inverted dolphins. The later doors show the influence of Indian craftsmen. Natural forms are used more freely than is consistent with Mahommedan custom, especially in the pierced stone grilles used in the older mosques and houses in place of windows.

Since the prevailing Mahommedan sect in Zanzibar was that of the Ibathi, who are opposed to ostentation in religious buildings, the mosques are severely plain and inconspicuous. They have not the usual central court, and consist of a series of arcades, at right angles to the main axis, supporting a flat roof. Some ornament is bestowed on the " Mihrab," the niche indicating " Quiblah," the direction of Mecca, and adjoining this is sometimes built in the thickness of the wall the " mimbar " or pulpit. The entrance to the mosque is generally at the opposite end to the mihrab and has the ablution place adjoining. Light is admitted by barred windows placed level with the floor,

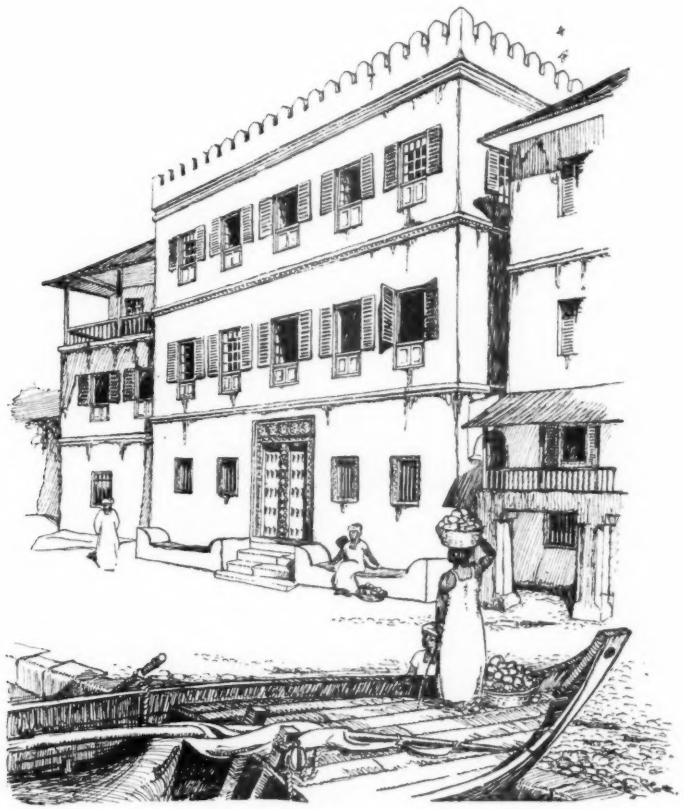
possibly, as Sir Richard Burton asserts, to enable the worshippers to expectorate outside. The Muezzin calls the hours of prayer from the roof, the original practice still maintained by the Ibathi sect.

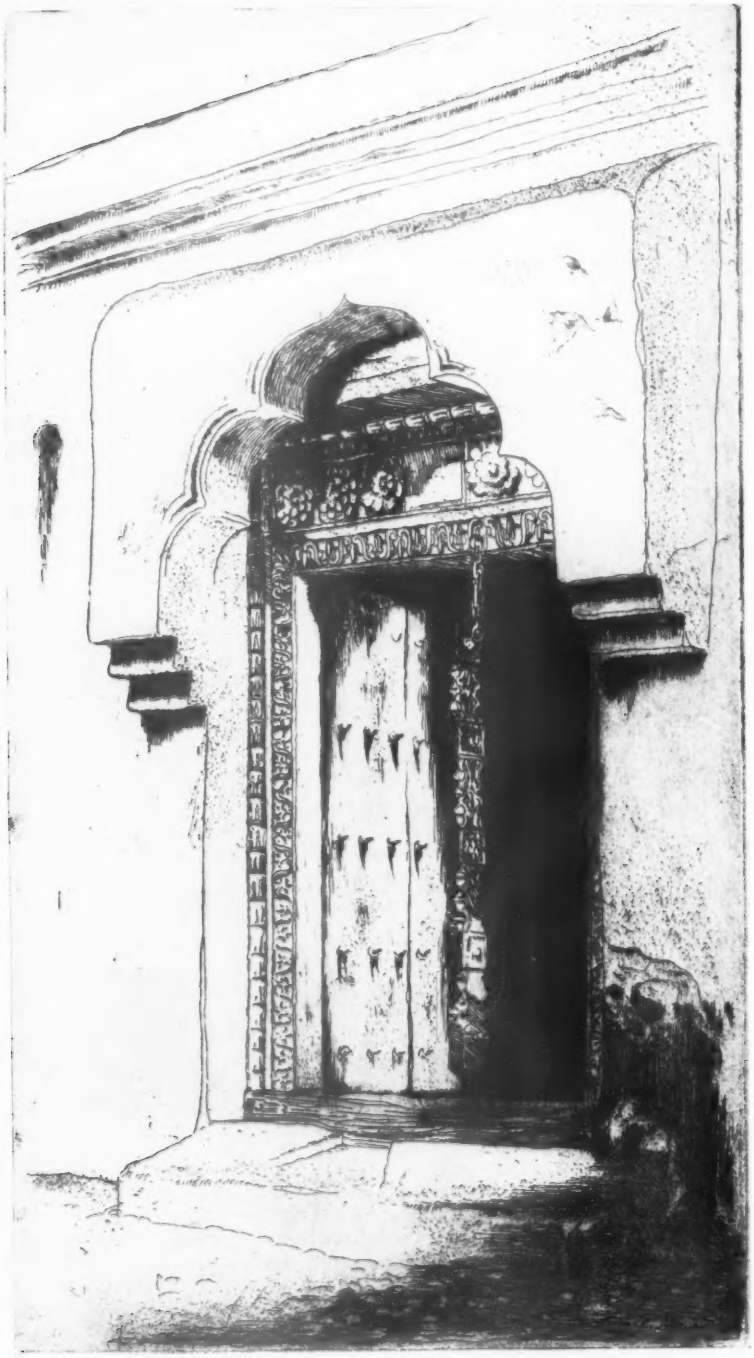
There is in Zanzibar town but one mosque having a properly formed minaret. This is the Sunni mosque in the Malindi quarter. This minaret is of a primitive shape somewhat common about this coast and in buildings in the Libyan desert. Towers of this shape can be seen in Assyrian bas-reliefs.

Records exist of the foundation of the now ruinous mosque at Kizinkazi in 1107 A.D., and there are in Pemba ruins of mosques of contemporary or earlier dates and a number of thickly overgrown remains which have not yet been properly investigated.

The palaces of former Sultans at Bet-el-Ras, 'Mtoni, and elsewhere in Zanzibar, now picturesque ruins, have little architectural interest. They date from the last century and are a medley of Arab forms and base western importations. They are worth some investigation, however, for their Turkish baths, which were once lined with imported marble and are vaulted. In the palace of Chukwani some sultan, apparently returning from Europe enthusiastic for

ARAB · HOUSE · BY · QUAY
ZANZIBAR
Parapet recently restored and glazing modern

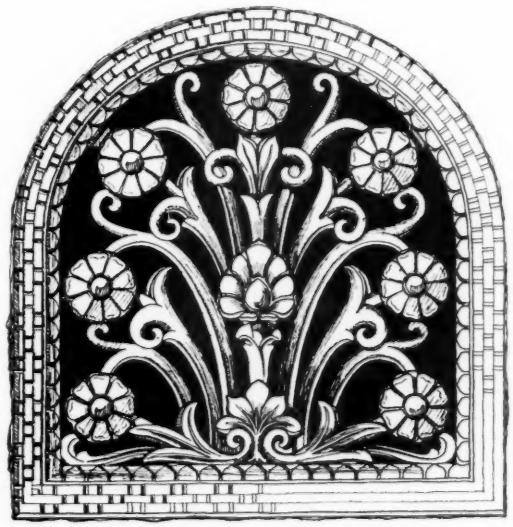




Arab Doorway, Zanzibar

western ideas, has had erected a range of windows as in a railway carriage with straps to pull up !

The Zanzibar Arabs are a dying race and with the effacement of the former barbarities of the slave trade has come the gradual disappearance of their art, which



PIERCED STONE GRILLE
ZANZIBAR

is now being supplanted by the worst products of Europe as interpreted by the now considerable Indian population, who have almost lost all art of their own.

The writer is indebted to Mr. W. H. Ingrams, Assistant District Commissioner, Zanzibar, for the historical data of these notes.

Reviews

SOME MANCHESTER STREETS AND THEIR BUILDINGS. *By Professor C. H. Reilly.* 126 *pp.* 5*s. net.*

SOME ARCHITECTURAL PROBLEMS OF TO-DAY. *By Professor C. H. Reilly.* 205 *pp.* 5*s. net.*

[*Both published by the University Press of Liverpool, Ltd., and Hodder & Stoughton, Ltd., London.*]

These two books by Professor Reilly mark a new stage in architectural criticism. At last an architect has appeared who is willing to address himself seriously to the task of analysing and describing for the benefit of the public what the public sees with its eyes but not yet with its mind—namely, the quite ordinary buildings of our modern towns, the buildings most of us pass by with disgust or indifference. The public is tolerant of these buildings because it is inarticulate, and it is inarticulate for the simple reason that it has never been taught the language of civic architecture. If only this language had been made familiar to it from the very beginning of the industrial era in this country, we should have been spared the rapid uglification of our towns which took place what time our architectural preceptors, ignoring the more fundamental aspects of their art, talked learnedly about construction and craftsmanship and other matters, important perhaps in themselves but having little relevance to a general policy of civic building. The result was that the Victorians could construct wonderfully, their craftsmanship was technically superb, and yet they could scarcely set two buildings beside each other without creating a discord.

On behalf of architecture Professor Reilly goes into the market-place and tells us what is really wrong with so much of our modern urban buildings. The task he has chosen is a difficult one because, when in the presence of the nondescript and insignificant, our first tendency is to pass it by without comment. " Really," we say, " we can't be bothered to waste time over that kind of thing." But unfortunately " that kind of thing " is spoiling our towns ; and while it may be pleasant to concentrate our attention upon examples of good building either at home or abroad, it is also necessary to eliminate the bad buildings which outnumber the former by ten to one and by their mere propinquity defeat the æsthetic intention of the good buildings. Even a few hooligans can turn a most distinguished assembly into a brawl, and how much worse is the case when the undisciplined element is in a vast majority !

Professor Reilly attributes our present architectural anarchy to the Gothic Revivalists, who broke up the great English tradition of urban building. " It is appalling," he says, " to imagine the infinite damage that that movement of earnest but archæologically-minded men has done for us and our inheritance. We pride ourselves as a nation on our strong conservatism and common sense, but in truth we are more sentimental, more easily swept away, by Romantic high-falutin' than any other race except the purely Teutonic ones. Ruskin simply turned us, or rather our houses, upside down. The quiet, dignified old England of Rowlandson's drawings—I refer to the houses, not to the people—was changed to the speckled red and white, the pink and blue irregularly strewn crumbs of any awkward pointed shape of which Bournemouth, wholly built in Ruskinian and post-Ruskinian times, provides the supreme example."

Besides Bournemouth and many residential towns like it, the great industrial cities have suffered equally from the failure to understand the main principles which should determine the architecture of streets.

Professor Reilly, in these two attractive volumes, *Some Manchester Streets and Their Buildings* and *Some Architectural Problems of To-day* [each published at the popular price of 5s. by the University Press of Liverpool in conjunction with Hodder and Stoughton], has placed before the general public the very doctrines which, if accepted by it, would lead to a speedy improvement of the present state of urban architecture. The first of the volumes mentioned is a critical analysis of the principal streets of Manchester. Before giving my impressions of it I have waited until I had an opportunity to visit the city myself and, with Professor Reilly's fascinating guide-book in my hand, to study the actual buildings by reference to his commentary. I found it a most enjoyable and educative occupation. The good, the bad and the indifferent in the architecture of Manchester are here portrayed to us in a manner which leaves no doubt of the justice of the author's good-natured but candid verdicts. A proof of this was the kind way in which Manchester architects received these articles when they appeared in the daily press. Instead of shunning the author they made him their guest. What is now needed is that a host of other critics should be inspired by Professor Reilly to perform similar services for those industrial towns which, when once truly envisaged by their inhabitants, would become unbearable to them.

In the second volume Professor Reilly has collected a number of topical articles dealing with a variety of subjects. Here again the town is his chief interest and he discourses upon types of civic building—churches, banks, railway stations and, of course, the all-important house and cottage. Nor does he confine his attention to England, for his rare understanding of America enables him to draw illuminating comparisons between architectural tendencies in the two countries. Professor Reilly is no slave to any particular style, and while admiring the beauties of Nash's Regent Street he can yet pay a generous tribute to the new Liverpool Cathedral. His article on "Regent Street Old and New," which in the first instance appeared in the *Observer*, best expresses his general outlook upon street architecture. Of the new street he says: "It is the want of submission of the individual building and trader to the whole which has changed the character of the street and has lowered it from its old high level to that of a commonplace, bustling thoroughfare, efficient enough, no doubt, for those who consider it a suburban shopping centre, but not for those who would have wished to see it symbolise again some of the best aspects of our civilisation." The mention of a few headings of the chapters—"Recent Government Buildings," "The Office Block," "The Emergence of a New Style," "Colour in Street Architecture," "Bath or Bournemouth," "Architecture and Youth," "Fifth Avenue, New York"—will serve to indicate the range of the book. Readers may be recommended to savour its qualities for themselves. Penetrating observations will be found on every page, as when Professor Reilly says: "Now suburbs are only too anxious to turn their backs and pretend they belong to the country—a thoroughly snobbish and suburban proceeding when but for the town they would not exist," or "Scotland Yard is that clever and impossible thing, a compromise between a German Schloss and a French chateau—a sort of reparations settlement with England left out"; or again, "Our town buildings should pay a conscious tribute to our civilisation instead of being an unconscious revelation of it." A style extraordinarily pleasant and easy to read, enlivened with plenty of wit and with just sufficient spice of malice, is here employed for a very serious architectural end—namely, the upholding of an æsthetic standard by reference to which the public itself may and should become the critic and the guardian of our towns.

A. Trystan Edwards [*A*].

STRUCTURAL DESIGN IN STEEL FRAME BUILDINGS. *By Percy J. Waldram. B. T. Batsford, Holborn.* 12*s.* 6*d. net.*

This text-book is one of the most admirably-produced books of its kind I have ever seen. While it is intended primarily for the use of Structural Engineers, it none the less supplies a want which I am sure has been long felt by architects. This is perhaps chiefly because the matter of the book is confined to the sort of building mostly required in large cities to-day.

The book is arranged in such a way that it has that most useful of qualities not always found in text-books. That is to say, it has great facility of reference. The plates and inset diagrams are well drawn in a strong line and to a scale large enough to be scrutinised in detail without that head-aching eye-strain which usually results from any careful observation of the diagrams in most books on steel construction.

The Introduction gives some interesting observations on the history and development of structural steel design.

In the treatment of the main subject, an actual example of building is taken and worked out with the fullest diagrams and minute details. Besides this, there are about a dozen pages of useful tables and a concise index at the end.

E. Frazer Tomlins.

Correspondence

THE LIGHTING OF PICTURE GALLERIES.

To the Editor, JOURNAL R.I.B.A.

SIR,—Mr. Markham's letter, published in your issue of 7 March, and Mr. Percy Waldram's of 21 March, strengthen the regret that it has not been possible ere this for me to bring together in book form, for easy reference, my three articles and many letters published in the JOURNAL; the articles published in *The Builder* and the letters published in *The Times*.

Had such a work of reference been available Mr. Markham would not have committed himself to the reiteration of the fallacy "that glass must reflect something."

Tests made at Wembley, the FitzWilliam Museum, and Spring Gardens Gallery give conclusive evidence to the contrary, nor would Mr. Waldram have stated that the top-side light method I have brought forward "requires that the spectator should be in a fairly deep shadow."

I have shown that "a deep shadow" is not necessary in order to get rid of the reflections—in fact, as shown in the experiments in the Wallace Collection and at Wembley, the difference in the intensity of light may be so slight as not to be realised by the spectator.

The difference is no greater than that seen at any time when the sun is shining in a gallery having a N–S axis; then either the east or west side will be the better illuminated and the reflections will be non-existent in the pictures on the better-lighted wall.

He will find also on a re-perusal of my paper that I have not suggested "the screening-off as with a vertical unoccupied partition any view of bright objects on an opposite wall." There is no need to "screen off" the opposite wall. Difference in illumination is all-sufficient—created either by a different intensity of light or by having on one wall only dark pictures with dark frames or any exhibits—as tapestries, etc.—which will absorb light.

Mr. Waldram speaks also of "the apparent waste" which correct lighting involves. I have already shown that a picture gallery can be lighted by the top-side-lighted method in such a way that every picture can be perfectly seen, not only without any extra expense, but even more economically than if erected in the old unscientific and inartistic manner to be seen everywhere.

I am confident this will be proved in the near future by one or other of our well-trained and gifted young architects, by the erection of a gallery—let us hope at Manchester—which will be not only "Scientifically Correct," but "Designed with Beauty," and built in such a way that it shall stand as a witness to the truth that "The excellence of any work of art lies in the complete accomplishment of its purpose."

Yours faithfully, S. HURST SEAGER [*F.*].

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I have read with interest Mr. Waldram's letter in the last number of the JOURNAL, and should like to add a brief word of explanation to my first letter. Mr. Waldram thinks I have not appreciated the fact that two sets of reflections have to be guarded against—the one from the ceiling, the other from persons or objects on the floor. I think I quite appreciated both.

The proposal I made consists merely in an application of the elementary principle governing light reflection; that the incident and reflected rays lie in the same plane, and the angles they make with the reflecting surface are equal. That being so, it follows that for an observer in a certain position a fixed plane of glass can only reflect a pencil or group of rays coming from one quarter. If, therefore, the glass plane were arranged to reflect a part of the wall surface over the observer's head it could not also reflect rays from somewhere else.

Mr. Waldram, if I understand him aright, states that the reflections of persons or objects on the floor are not subject to the simple geometric law of reflections stated above. This I find it quite impossible to accept.

In common with Mr. Waldram I appreciate very highly the work done by Mr. Hurst Seager, whose labours have chiefly been directed to ascertaining the best form for a new gallery. He finds against a lofty gallery; but many existing galleries are very lofty, and I think my suggestion ought to be of value in such cases.

There may be other evils to contend with besides direct reflections. For these, no doubt, other remedies are called for; but if reflections can be got rid of something is attained, and to this alone do my suggestions apply.—Yours truly,

JOHN H. MARKHAM [*F.*].

The Library

FARM HOUSES: SMALL CHATEAUX AND COUNTRY CHURCHES IN FRANCE. By Antonio Di Nardo. Fo. Cleveland, O. 1924. £4 10s. [J. H. Jansen, Cleveland, Ohio.]

The Americans are gleaning with zeal and industry in the European field of Archæology, and in this book much good grain is to be found. It is well got up, the type and printing are admirable, and the illustrations well reproduced.

Mr. Crét's introduction is interesting and picturesque, though disfigured by the terrible word "realtors" (Query, dealers in real estate?). There are some 280 illustrations, mostly from photographs, with a few charming drawings by the author, which one could wish more numerous.

In spite of the restricted area covered—mostly in Normandy, with a few from Brittany—anyone familiar with the district will miss many worthy subjects, notably from Dol in Brittany, but it is ungrateful to regret what we have not got when the author has given us so much. C. E. S.

The Late Marquess Curzon, K.G., P.C., G.C.S.I., Etc. (Honorary Fellow)

BY THE PRESIDENT (MR. J. ALFRED GOTCH).

By the death of Lord Curzon architecture loses an enlightened patron and a discerning critic. In the public tributes that have been paid to his memory stress has been laid upon the thoroughness with which he mastered the essential details of any subject with which he had to deal. This is true of architecture, with which he had more than the ordinary amateur's acquaintance, yet ever bore in mind that his knowledge was that of an amateur.

His munificence in the restoration or rather preservation of certain old buildings is well known, notable among them being Tattershall Castle. It was on the summit of the tower of that building that I was introduced to him, after the ceremony of re-opening, which took place in the early days of the war, and before the complete absorption of the country in that terrible struggle. Some months later he asked me to go with him to look at another fine ruined house, with which I was familiar, but which he had never seen. We paid two visits and discussed the history of the house and the prospects of repairing it. On the second occasion we spent the greater part of the day there, armed with sandwiches which we ate in a deserted room. Nothing could have been simpler or more genuine than Lord Curzon's behaviour; the Ex-Viceroy of India might have been a fellow-student out on a sketching expedition. But he brought to bear on the investigation the knowledge and experience of a man of the world accustomed to live in large houses, and he subsequently sent me a long report dealing with the problem of how this great house could be, in his opinion, made habitable, if ever the opportunity should occur.

His interest in architecture and his acquaintance with it as well were further shown in his monograph on Kedleston Church, of which he presented a copy to our library. It is excellently done, full of historical detail, and clearly indicating the work which was done to his own orders, and among its pages, withal, one catches glimpses of the masterful spirit which distinguished him. It was his intention to write a similar monograph on the great house of Kedleston, and much is it to be regretted that his intention was not fulfilled, for no pains would have been spared that learning, research and a wide outlook could have suggested.

In another connection I came in contact with Lord Curzon, and that was the Fine Art Commission, of which he was one of the two lay-members. It would be unbecoming to say much without the concurrence of my colleagues, but this may, I think, be said without impropriety, that he would absorb the views of those who had perhaps greater technical knowledge than himself, and then express them briefly, clearly and felicitously. His high position, as well as his personal qualities, made him a most valuable member of the Commission, and it will be a difficult task to find a successor with gifts as great and influence as wide as those he brought to its service.

BY A. S. G. BUTLER [*F.*].

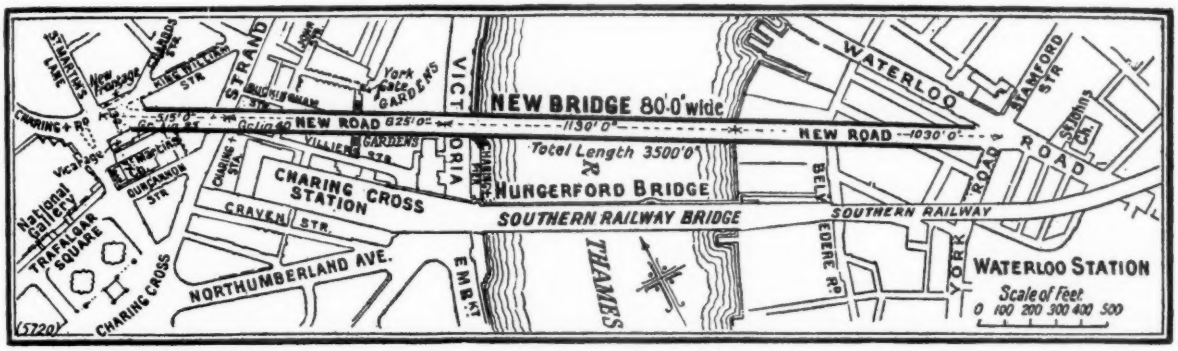
Members of the Institute will have read with regret the news of the death of Lord Curzon, for the reason that he was one of the few important men of our time who understood architecture and took an interest in its encouragement. Some of them will recollect his admirable speech at the opening of the recent exhibition of the Architecture Club. Anyone, too, who has known him intimately in connection with his own building operations will recall that here was at least a man who took the utmost trouble to obtain the very best results, and never spared himself in the effort to achieve the end he sought. In that he paid a high compliment to our art. He really loved a fine building, and always maintained that the preservation of its monuments was of paramount importance to a country. It will be remembered how he inaugurated the care of buildings in India during his viceroyalty, how he took Montacute and renovated it, how he rescued the fireplaces of Tattershall from a dealer, bought the castle, and restored it, superintending the work himself, once a week, while a member of the Cabinet. He restored Bodiam similarly; and in his house at Hackwood and in London surrounded himself with a refinement of splendour which it was impossible not to appreciate for its high quality and perfect taste. But it is the undertaking of the restoration of Kedleston, about a year ago, which is most to be applauded. For this house, possibly Robert Adam's greatest work, was an object of devotion to Lord Curzon, not only because it represented the home of his family for eight hundred years, but much more—I venture to say—for its great value as architecture. That a man in these days, knowing the uncertainty of his life and fearing the climate of the place, should undertake such a task solely out of respect for the age and beauty of his possession is indeed rare, and, I think, displays an attitude of mind of which architects will read with grateful sympathy. I can attest its truth: Lord Curzon did not care for grandeur for its own sake, and despised luxury. He merely liked and insisted on having everything well done. Such a man as a client was, of course, tremendous; no detail, however minute, escaped his attention—not even the tap of a scullery sink or the handle of a boxroom door. They

had to be exactly right, at whatever expenditure of time or trial and rejection of samples. Yet, though the strain of working with a man of such gigantic capacity for taking infinite pains was sometimes almost unbearable, I hope that other members of the profession who, like myself, have had the advantage of his friendship—as well as all the firms in the building world who have made things for him—will forget his frailties and recall his courage and splendid thoroughness. His service demanded an almost exquisite efficiency, which it was worth while trying to give.

Some, perhaps, will deplore with me as well the loss of one who, in unofficial hours, made the most enchanting conversation, always learned, intensely humorous, *never* pompous, and illustrated with reminiscence from an astonishing achievement in every sphere of life.

Charing Cross and Waterloo Bridges

SIR REGINALD BLOMFIELD'S SCHEME



Sir Reginald Blomfield in a letter to *The Times* published on 30 March outlines a new scheme for a new bridge over the Thames in the neighbourhood of Charing Cross. In doing so he explains that he now considers the demolition of the present railway bridge and station impracticable in view of the immense cost involved.

Sir Reginald in the course of his letter writes as follows :—

" The necessary conditions of a new bridge and roadway in the neighbourhood of Charing Cross seem to be that at the south-eastern end the roadway must leave Waterloo Road at an easy angle, with plenty of room for crossing traffic, that it must cross the river at a high level, clear of the Southern Railway property, that it must avoid bringing cross traffic into the Strand, and that at the north-western end it must land from the higher level in a space wide enough to admit of easy turning. As cost has to be closely considered, compensation must be reduced to a minimum. To meet these conditions I venture to make the following suggestion :—

" Starting from the point at which Stamford Street and York Road intersect Waterloo Road at the south-eastern end, the roadway would pass between the Lion Brewery and the Shot Tower, rising by an easy ramp to a high level bridge, carried across the river and the Embankment. The roadway would continue in a straight line to the Strand, at a gradient of 1 in 40, and would cross the Strand by a bridge immediately to the west of Coutts' Bank. Thence it would descend at a gradient of 1 in 25 to a ' Place ' measuring about 240 ft. by 130 ft., formed at the intersection of Charing Cross Road and St. Martin's Lane, opposite the Cavell Memorial. From this centre traffic could go north-west and south-west, and Waterloo Bridge would be relieved of all traffic except from the east and north-east. York Gate, which is at present half buried, could be removed and re-erected further east, on the higher ground in the gardens at the end of York Buildings, where, for the first time, it would be properly seen. The bridge and roadway would be 80 ft. wide, the length from Waterloo Road to the bridge over the Strand would be about 2,985 ft., the total length end to end would be about 3,500 ft.

" The advantages of this scheme are :—

" (1) That it relieves the new bridge of the great cost of compensation to the Southern Railway, and brings it within the range of practical politics.

" (2) That it will relieve Waterloo Bridge of a great part of the traffic and enable the bridge to be preserved in its present form.

" (3) That it provides as direct a transit as is possible for long range traffic, say from the New Kent Road by Waterloo Road, the new bridge and road, and Charing Cross Road to Tottenham Court Road.

" (4) That it involves a minimum of interference with important buildings ; and

" (5) That it brings no cross traffic into the Strand.

" The fate of Waterloo Bridge seems to me to depend on the decision arrived at in regard to a new bridge in its neighbourhood, and the problem of the old bridge and the new should be regarded as one. I venture to put forward this suggestion in the hope that the old bridge may be preserved if it can be shown that a new bridge will answer all purposes of traffic, and can be built at a figure that is not absolutely prohibitive."

The Corporate Spirit in Architecture

DISCUSSION ON MR. FREDERICK R. HIORNS' PAPER (*see* JOURNAL, 21 *March*, *pp.* 301–316).
(MR. WALTER CAVE IN THE CHAIR.)

Professor W. R. LETHABY, in proposing a vote of thanks to Mr. Hiorns, said: I should rise, Sir, with very great pleasure to fulfil this duty if I could speak with any readiness, but, unfortunately, that is a thing I cannot do, therefore I have made a few notes, which I would like to read.

It is very difficult to speak on this admirable paper; there is so much in it that I should like to talk about. But first, before formally moving the vote of thanks, I would add my most earnest personal thanks.

I will first quote a few phrases from the lecture itself, as texts:—

First, "the corporate spirit in architecture."

Second, "natural building and a sincere creative art."

It touched me very much, when we saw these wonderful slides, to see that you all spontaneously recognised two or three common or humble buildings which had risen, somehow or another, as if self-built from the soil.

The third is, "common desire for order and fitness."

Fourth, "the condition is a spiritual one, a question of the right point of view." I want to talk an hour on these; there is material in them for seven sermons.

Fifth, "a common policy towards a common end is required." I feel I want to lecture on that. Sixth, "it is only as a result of a social attitude that we can expect noble sites, streets and houses."

Seventh, "self-expression of the workman is a human need that cannot be suppressed without resultant disorders."

That architecture is indeed a fruit of the corporate spirit none would doubt; but not only is it a product of the community, the essence of any expression which goes beyond that of mechanical service; it is community expression that has any valid reality in architecture. Directly it becomes a personal expression and is isolated from the communal spirit of the time it is a mere vanity or whim. This is one of the great difficulties in talks about architecture, that any expression which counts must be a community expression. That is really the point of the lecture which we have heard to-night. It is the sum, also, of all the prophets: Ruskin, Morris, March Philipps, and the lecturer would, I think, agree in saying that what they mean by architecture, what they really care about, is not grandeur and style, or anything outward; it is the spirit shining through the common expression. In the buildings shown on the screen which you applauded there was obviously no grandeur, none of the style taught in the schools, but there was something about them that moved your hearts; these were human buildings that had come out from the ground through the hearts of humane men.

Of course, there is a sense in which what we now have in Oxford Street and Whitechapel represents us exactly as Athens, Florence, Amiens or Wells were representative of the past. You will remember those slides of modern disorderly advertisement-plastered streets that came as shocks to most of us. I want to suggest to you that they were not mere irritating mistakes, inartistic, non-communal, but that they mean something in civilisation. That shock which came to us from the pictured thing is, unrealisedly, a shock in all our hearts as we pass down those streets. It is a killing influence that is abroad, and unless we can see our way slightly to amend it—a millionth per cent. of movement in another direction would give us hope—this thing will go on. We do not expect great transformations, but the mere recognition of the terror of these things would do something. The vast Parthenons and Cathedrals in London reared to attract shopping women, and the steel huts that will not get built in the country to hold the working man, are the external crystallisation of our age. It is not a matter of "taste," or poor "architecture"; they are only words which come between; it is a profound matter of life. The modern anarchy is a perfectly expressive style of to-day. Still, we cannot but hope—or at least act as if we hoped—that there is some mistake. Conditioned as we are by that which is all about us, we hope that our wills or our intelligence might be factors which would bring about some slow change, if we only tried.

How are we to try? If art were an outward thing, we might go on repeating the semblance of masterpieces for ever; we have forty literary men who could turn out imitation Shakespeare to perfection. I once heard Morris say, when looking at some sham antique picture, that "no doubt the trick of forgery did stimulate the English mind to its highest activities." We have twenty sculptors who could do imitation Michel Angelo, and we have at least six architects who, on paper, could do Gothic or Wren designs. But that is all no good; it is less than no good, because it is a positive betrayal. Such work, however grand and clever, is less than art, because it lacks the breath of life which is the corporate spirit, folk expression. Such grandeurs and whims are still-born. The root of all artistic principle is this: the root must be in the ground.

While entertaining such thoughts we may be likely to suppose that we are in an unpoetic and an inartistic age, and that we cannot get out of it. But I am convinced that in some degree we could help it, and that is what we want to try to get at. On such occasions as this I often wish—it is an absurd wish, I know—that we could take a vote and find that so many of us agreed to something or other as a beginning—to some simple proposition and that we could then go forward to the next point. The next point might be to say that although we inherited the notions, or the lack of notions, of the last generation, all the able and eager young men who are being indurated with what is called architectural theory shall at least hear the occasional rumour of a rational basis for their ambitions. What is this basis? It is what we have heard to-night in the lecture. To serve, to interpret the needs and to express the community, the nation, the city, the building craft itself.

If we could point to such a solid standing ground, putting the thought of a national service of building, in place of a vague and visionary notion, it would be all to the good. I think my generation was maddened by the notion of an abstract, æsthetic architecture, the Lord High Admiral of all the Fine Arts. If we could place the rational notion that architecture is serviceable building for the community, in place of the remote consideration of abstract and absolute æsthetic notions, we might get somewhere. If we got that foundation agreed, we might go on to see how the thought of a national service of building would work out, and thus we should immediately be brought up against simple notions, like economy, efficiency, science, structure, and so on. Any one of these which really had its basis on the earth would do. Economy—which we sometimes look on as our chief enemy, standing between us and the realisation of all these visions in the air—if we could face economy for five years, that would give us a building architecture. You will remember that, near the end of the lecture to-night, we saw an astounding pile of what they call "sky-scrapers" in New York. A friend of mine has recently come back from America. He told me that, rich as they are there, they are faced with the need for great economy in carrying out these giant buildings, and have had to cut down the vulgar trimmings and all the plastering on of "style" which is a disease. The impressiveness of much that is going on in America to-day is the facing of a great need of economic production. So with the other simple notions which we can understand: efficiency, science, structure, and so on. If we faced these root things on which we stand, we should have to admit at last that there was more in building than what an old friend of mine used to call "swelldomania." We have been trained for two generations in architectural swelldomania, ideas of richness, grandeur, style, and it does not work, that is the point. If it had worked, well and bad!

I may take two illustrations from things of our own day to make my main meaning clearer; two illustrations which I hope may show in some degree how community needs will shape the art of building to right results. The idea of a free "design" in architecture is really the betrayer. If we could get out of that idea of a free art design into the sense that all building design was rigidly conditioned, we should touch a foundational bottom. The first illustration is furnished, to my mind, by many admirable groups of small houses recently built in England, which seem to me to be the most real, human, competent things that we have done for a century. These groups of housing schemes scattered up and down the country give me real delight. They are like some of the things we have seen on the slides.

The other illustration is taken from New York buildings and is the result of their new law for high buildings. This answering to compulsion, getting rid of whim, is giving the buildings a curious sense of reality.

What I have been saying reminded me of a passage in a letter of a friend of mine who had been let out of an asylum; he said: "I am interested in trying to enforce that the underlying reality is of more importance than the means of dishing it up, and that art should lead us to life." Perhaps I too, holding these views, ought to be in the same place.

Finally, just a word on what I suppose was the main message of the lecture: this need of recognising, in some way, the men who do the work. It is a tremendous problem. It is part of the problem which the Prime Minister has had in view during the last fortnight; it is a universal, a national problem. We as architects have a duty towards the workmen. We talk about beauty, and not enough about duty in architecture. But beauty is only reached through duty. All that seeming beauty outside which is not based on duty is not beauty. Beauty is the flowering of duty. We direct the workers with so many buffers in between—buffers in both senses—surveyors, contractors and clerks of works, that we have no direct contact with them at all; we are not allowed to have, really. It has become almost indelicate of an architect to speak to a workman on the job. He can smile at him round the corner, but even that is irregular. The corporate spirit in architecture must embrace craftsmen, and we must get back to the idea that building is more their concern than ours, by about 100 to 1.

Mr. GILBERT BAYES (Master of the Art Workers' Guild): It gives me the very greatest pleasure to second this vote of thanks.

I, too, have got some notes on Mr. Hiorns' lecture, and I will start by disagreeing with him on one point—

perhaps the only one on which I shall do so. In describing classic times, he speaks of work which was to gratify no primitive taste. I am a little inclined to feel we have forgotten primitive tastes too much in the past. As a sculptor, I believe there are certain primitive grounds on which you can speak to the man who has had no art training; certain things which will appeal to him, and which, if you give him in your art, he will give you *carte blanche* to "Do whatever you like in your own particular craft afterwards." We have too long produced things which he could not understand. We must speak to him in a more simple way, but certainly not in a make-believe primitive style such as is dished up to us to-day. There are certain fundamental things which a perfectly healthy, simple-minded person can understand, and which he has every right to expect us to give him in and on the buildings we erect in the streets, which he probably has to pass more often than we have.

(Mr. HIORNS: That was not my view; it was part of the quotation.)

I agree, but I mention it because we need to come back to simple straightforward stuff. "Their works were the nation's boast," that is what we should aim at, and the simplifying of private life. Surely these two things together appeal to us very much to-day, with all our labour and domestic troubles.

Mr. Hiorns tells us "that Phidias, Ictinus, and others produced their divine creations to serve the esoteric fancies of no select and lordly tribe of connoisseurs; they were the nation's Ministers." That is a healthy theory.

If we could put forth our energies to the making of public works which are worth having, we might get somewhere. We, as Londoners, should take a pride in making London the finest city that was ever built. We should make it our business to take on the duty which lies close to our hands. We look too far afield and we do not get anywhere; if we looked at things close to our doors we might do something. I feel increasingly, as I see more and more of life, that with every artist, painter, sculptor, or whoever he may be, the greater percentage of his work should not be done for exhibitions, but should be done for a specific purpose and place. If we could only get back to that I think we should get rid of so-called modern art, where each thing is virtually a "stunt" to be talked about. If we could put our work to definite and reasonable use we should very soon become a healthy body of artists.

There is to-day a lack of co-ordination and realisation. The tendency is to think of ourselves as individualists; it is so seldom you can get a man to realise that he is only part of an architectural whole, possibly a very small part. In many cases it is not his business to strike the main note. He must have sufficient pride to do his best; but he must also have sufficient humility to be content to strike a quiet note in the orchestration.

Thanks are due to our lecturer for saying that he feels that modern work can hold its own, from the point of view of craftsmanship, with almost any other period, because I feel we are inclined to make rather too much of the past; and on looking round, one does find some extraordinarily good work done to-day, work which is not getting full credit.

I also welcome heartily his comments upon colour. As things are at present, and until we get a much more active Smoke Abatement Society, we shall not get a white city, but we might be a gay and coloured city.

Mr. HALSEY RICARDO [*F.*]: I had no intention of entering into the discussion when I came here to-night; but I think we might take a parallel from other manufactures. In mediæval times there was co-operation of the skilled with the unskilled, all working more or less in one place together, seeing what each other was doing and discussing and talking matters over. We cannot reproduce that, but a parallel might be followed if we consider the construction of a great field gun. In the construction of one of those implements there is tremendous enthusiasm and excitement. There is the casting of the gun, the shrinking of the jackets, the boring, all done with intense enthusiasm and accuracy, because failure to the extent of a ten-thousandth part of an inch means that the gun is practically no good. There is then the carriage to be made and the contrivances for the sighting, elevation and depression of the gun, in which everybody is concerned. The man who works at the lathe knows quite well that all depends on him as well as on everybody else concerned in the matter, and that they are all working towards the common end. You get a grouped production which we might imitate in architecture, and so enlist the sympathy of everybody concerned in the work. I grant that we cannot get all the trades under one roof or in one courtyard to discuss and talk about the structure, but still there might be great help if in the stonemasons' yard there were put upon their wall the elevations of the building as it is to be. Then each man can see where his stone on which he is working is going to be placed, and it gives him an interest in the matter, and he will in that way feel that he is giving some character to the work. The same can be done in the carpenter's shop. The carpenter could have, besides his working details, a picture of the building as it will be, so that when he comes to the treatment of the joists, etc., his interest is aroused, and he will derive an interest in the work as a whole. It would be of help if we could get individuality in our buildings, for it would lead to much good afterwards.

I discuss the case of the gun because, as Mr. Hiorns and Professor Lethaby have said, it is based on a thorough scientific knowledge of the materials that are used. If the gun is no good for a target eight miles away it is of no use at all. Though the gun is a destructive weapon—and so the opposite of architecture—there is still that feeling that everybody's work is a necessary contribution to the perfection of the whole, and that everything must be done with the nicest accuracy. Therefore I think that is a useful parallel to what we might have in our building work.

Mr. LAURENCE TURNER: On going through the City one could not help noticing, in the buildings one passed, how each was a separate unit and bore no relation to those on either side of it. There was, however, one building which was designed to carry through the horizontal lines of the buildings on either side. The street in that particular part gained enormously by carrying on the architectural lines. I think that what we have been talking about to-night turns upon one of our chief Commandments, that of our duty towards our neighbour. When an architect designs a building and the existing near buildings have a cornice not of the same height but lower down, it is most unneighbourly to sheer off that cornice and leave it truncated. One architect allowed the overhanging cornice to sail on to his building, and it did not detract from its beauty.

Our lecturer referred to stone carving, and quoted that many buildings would have been better if they were shorn of their carvings, and also remarked that craftsmen should not be so insubordinate. Probably the ordinary public might consider that the stone carver was the most insubordinate person of all. As a matter of fact he is one of the most subordinate, because he always obeys the architect's orders, and it is the architect who is to blame for any excess of ornament or ornament in the wrong place. I think the amount of carving on most buildings is not in excess to-day, in fact there is very little of it. There is a tendency, and a right one, to put carving in definite places where it can be treated as a sort of jewel, great care being taken over design and relief so as to make the piece of carving the fulfilment of the object which the architect has in view.

Mr. JASPER SALWEY [*A.*]: There is one aspect of the matter which might embody the realisation of this corporate spirit which we desire. I have noticed that when a description appears in the ordinary daily paper of some of the buildings which have been erected lately, or those which are about to be erected, it has evidently not been edited by an architect. It is a very rough-and-ready description, and much of it is very inaccurate. I think we might do much if more interesting accounts of these buildings could be published in the daily Press. Good articles are written about them in the technical journals, but, to stimulate the interest of the public, good articles should appear in the daily papers. If we could arouse a vital interest in architecture in that way, we might be able to draw back into the fields of architecture some of the men who are the descendants of the great craftsmen of the past. But their sons have been diverted into other fields, such as engineering, where their interest has been stimulated by the articles which have appeared in the papers.

Mr. A. TRYSTAN EDWARDS [*A.*]: It has occurred to me that one of the questions which we ought to ask ourselves is, how the architectural profession itself can aid the creation of this corporate spirit? It has been assumed in some of the remarks which have been made that it is the commercial spirit which has caused this lack of communal building. But it seems to me that one reason is to be found in the system of draughtsmanship, by which it is the common practice to design a building which has as its entire visible boundary the four sides of the drawing-board. That is one of the reasons why the true Georgian builder was better than many of the architects to-day: it is due to the fact that when he had to design a new building he would go to the place where it was to be, and see how his proposed design would look juxtaposed to the buildings on each side of it; and I should be inclined to say that there are two things we chiefly need, two things which the architectural profession can itself supply. In the first instance I feel it ought to be a fixed rule that every design of a new building should have, on the same paper on which it is drawn, a sketch of the buildings on each side of it. Another practice, really a social matter, which might aid the communal spirit, is that before a design is executed it might be extremely useful if a copy of it were handed to some of the neighbouring building owners, so that they might possibly express their dissatisfaction with it before the damage is done.

The CHAIRMAN: I have great pleasure in putting to you the vote of thanks which has been duly proposed and seconded.

Carried by acclamation.

Mr. HIORNS, in reply, after thanking the various speakers, said: I rather feel it was impertinent of me, when there are so many masters of the art of architecture and masters of sculpture and of painting and the other arts associated with architecture here who would deal with the matter so much better than I can, to have attempted to place these points before you. I am very anxious indeed, as we all are, that we should realise, perhaps more than we do, how much

we depend on the corporate spirit if we are to do anything really good in architecture. We depend very much on an intelligent interest on the part of the public, and certainly we depend a very great deal on proper fellowship and good feeling between all those who are concerned in the production of a building, not only architects, but painters and sculptors and art workers generally. It is very desirable, and it will be very helpful, if, in the course of time, we can foster the co-operative spirit rather more definitely between all who are concerned with the great art of building.

The following contribution to the discussion has been received from Mr. H. B. CRESWELL [*F.*] :—
I never in my life experienced such an æsthetic shock as that inflicted on us by Mr. Hiorns when, after we had been exalted in meditative bliss by visions of the glories of classic and mediæval architecture, the lantern flashed a view of the heart of a great modern city—the point of collision of Oxford Street with Tottenham Court Road, London, England, A.D. 1925. If Mr. Hiorns had made the physical sensation of closing pores and retracting blood-vessels which marked this revulsion of spirit, the text of his remarks, his leading point would have got home even more forcibly than it did. The dreadful contrast is no matter of ugliness and beauty; good architecture and bad; intellectual eminence and mental squalor: the uneasy giggle of laughter which sounded through the room when the slide appeared, disguised, as I believe, an inclination to weep at the degradation of our twentieth century souls. We cannot dissociate ourselves from responsibility for a system with which we gladly and wholeheartedly identify ourselves and in which we contentedly disport, fatten, and prosper. Do we lead in the reactionary movement? No, we do not. We acquiesce in what profits us and rub ourselves like purring cats against the legs of the accepted gods. If we applaud Mr. Hiorns, yet we also applaud those who tell us that architects ought to advertise; that education, other than specialised training directed to money-getting, is waste; that the special province of architecture is to advertise shopkeepers. None of us agrees with these rubbishy conceptions, I imagine, except in cynical affectation, but we entertain them and flatter the sources from which they flow rather than dare for a moment to forget which side our bread is buttered.

The London Society

The Earl of Crawford and Balcarres presided at the 13th annual meeting of the London Society, which was held in the Royal Academy on 19 March. About 250 members were present. Before moving the adoption of the report and balance sheet, Lord Crawford referred in sympathetic terms to Sir Aston Webb's illness and hoped he might soon be able to attend the meetings again. He also spoke of the grave condition (as it then was—the afternoon before his death) of the Marquess Curzon, who had been a Vice-President of the Society since its inception in 1912, and whose stirring address at the first annual meeting helped to launch the Society on its successful career.

Lord Crawford congratulated the Council and members on the steady progress made during 1924. He referred to the fact that the Society was still exploring the possibilities of extending its work through the affiliation of societies interested in London history and topography. On the subject of Waterloo Bridge he said he thought the decision to sweep away what is considered "the finest bridge in the British Empire" had been reached with undue haste. Regarding the preservation of St. Paul's Cathedral, he was glad to see there was no diversity of view; the only question under discussion was the technical means of strengthening the piers supporting the dome. Sir Henry New, honorary treasurer, in seconding the adoption of the Report, spoke of the satisfactory financial position of the Society, which was steadily increasing not only its subscribing membership but also its life membership; and as according to the constitution of the Society, the fees of life members had to be invested, the invested funds of the Society were steadily accumulating.

Dr. Graham Little, M.P., moved the re-election of Council and officers. The motion was seconded by Sir James Crichton-Browne, in whose speech a new and delightful version of the aim of the Society was given. He considered that the Society was seeking to kindle in Londoners a deep and enduring attachment to their City, something akin to the sentiment of the ancient Jews toward Jerusalem—"If I forget thee, O Gog and Magog, let my right hand forget its cunning!" Miss M. M. Jeffery proposed a vote of thanks to the Academy for allowing the meeting to be held there, a privilege which the Society much appreciated. Mr. Carmichael Thomas, Chairman of Executive, in thanking Lord Crawford for presiding, said he thought the three great aims of the Society which were outlined in the motto: "To protect the Ancient; to seek the Beautiful; to consider the Future," had been well maintained in their activities during 1924; these efforts had been chiefly concerned in the preservation of Waterloo Bridge and of the London city churches, and the endeavour to secure a new road bridge at Charing Cross.

An aerial survey of the section of London which is included in the Central London Plan is being made for the Society by Aerofilms, Ltd. It was hoped to secure these photographs during last summer, but there was no weather suitable for obtaining the photographs, which have to be taken at an altitude of 5,000 feet. The Society has now completed its User Zoning Maps for the whole of the boroughs north of the Thames, and these were exhibited at the annual meeting.

Amongst the interesting visits made by the members during the year were the following :—Headquarters of the Honourable Artillery Company ; the Admiralty ; the Guildhall, its Museum and Art Galleries ; the Royal Mint ; the Bank of England, and Cadby Hall.

Legal

6 Gray's Inn Place, Gray's Inn,
London, W.C.1.
31 March 1925.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—An interesting case arising out of the proper interpretations of arbitration clauses in the Institute form of contract was heard in the Court of Appeal a few weeks ago and I am indebted to "The Weekly Notes" for the report which I venture to think will interest members.—Yours truly,

W. E. WATSON [*F.*].

COURT OF APPEAL.

Smith *v.* Martin and another. February 25. Building Contract, Form of. Form of conditions. Issued by R.I.B.A.

Appeal from Lush, J.

By a building contract dated 24 January 1924, and made between W. A. Martin and D. Ospalak the employers, and A. P. Smith the contractor, it was agreed that the contractor should erect for the employers 36 houses at Alperton for the sum of £690 per house.

The conditions of the contract were those in the form in general use issued by the R.I.B.A.

By Condition 31 : "Should the employers not pay the contractor any sum certified by the architect" within the time specified in the contract, "the contractor shall give written notice to the employers of the non-payment, and should the employers not pay any such sum within the period of seven days from the date of delivery of such notice . . . the contractor shall be at liberty to determine the contract." And by Condition 32 : "Provided always that in case any dispute or difference shall arise between the employers or the architect on his behalf and the contractor either during the progress of the works or after the determination, abandonment or breach of the contract as to the construction of the contract, or as to any matter or thing arising under the contract," except as to matters therein specified, such dispute or difference shall be referred to arbitration, but "such reference . . . shall not be opened until after the completion or alleged completion of the works," except by the written consent of both parties.

The contractor commenced the work, and in the months of April and May the architect complained that certain of the works done by the contractor were defective and gave him notice requiring him to rectify it. On 10 May the architect gave the contractor a certificate for £600, at the same time specifying that the certificate was conditional for its efficacy upon previous rectification of the defective work. The employers, alleging that the contractor had neglected to rectify the defective work, refused to pay the amount of the certificate. The contractor gave the employers notice requiring them to pay the money in accordance with the terms of Condition No. 31, and on the employers failing to comply with that notice refused to do any more work under the contract and determined the contract.

The contractor on 1 August procured an arbitrator to be appointed in the manner provided in Condition 32, and the arbitration was commenced on 27 October.

On 12 December the arbitrator made his award in favour of the contractor for £1,156 11s. 6d.

The employers refused to pay the amount of the award on the ground that the arbitrator had no jurisdiction, the arbitration proceedings having been commenced before the completion of the works. On the application of the contractor the Master at Chambers made an order for the enforcement of the award under Section 12 of the Arbitration Act, 1889, and in appeal Lush, J., affirmed the Master's order.

The employers appealed.

Croom-Johnson for the appellants ; R. Fortune for the respondent.

It was contended, on behalf of the respondent, that by the lawful determination of the contract by the contractor under Condition 31, upon the default of the employers in paying the amount of the architect's certificate, "the works" were completed so far as he was under any obligation to carry them out, and that consequently the arbitrator had jurisdiction. The right of resorting to arbitration would be illusory if it was to be suspended until the employers chose to get the whole of the works contracted for completed by another contractor.

The Court (Bankes and Atkin, L.JJ.) held that the words "completion of the works" in Condition 32 meant the completion of the whole works contemplated by the contract and allowed the appeal. The deprivation of the right of going to arbitration did not leave the contractor without remedy ; he would be remitted to his remedy by action for work done and materials provided.

Appeal allowed.

Solicitors for appellants : W. J. Lake and Son.

Solicitors for respondent : Simon Haynes, Barlas and Ireland.

Obituary

MAJOR WM. BAKEWELL [*F.*].

Major Bakewell, who died recently at St. Margaret's Bay at the age of 86, was born at Hampstead on 21 December 1838. He carried on for many years an extensive practice at Leeds, where he designed numerous commercial and bank premises. Amongst the public buildings he designed were the Wakefield Hospital, the Leeds Coliseum, the Ilkley Town Hall, the Athenæum Buildings, Leeds, the City Square improvements, and the Pearl Assurance Building. Major Bakewell was articled for five years to the late Mr. H. A. Darbishire and entered the offices of Sir Charles Barry, architect to the Houses of Parliament. He was elected a Fellow of the Royal Institute in 1892.

JORDAN GREEN [*A.*].

Mr. Green, who died on 9 December, at Allenhurst, New Jersey, U.S.A., aged 46, was born at Birmingham, where he received his early education. As a young man he studied in New York, and finally settled in practice at Newark, New Jersey. He was a member of the American Institute of Architects and of the New Jersey Chapter of Architects. His most recent building was the Newark Athletic Club building.

Allied Societies

ABERDEEN SOCIETY OF ARCHITECTS.

(ABERDEEN CHAPTER OF THE INCORPORATION OF ARCHITECTS IN SCOTLAND.)

ABSTRACT FROM THE ANNUAL REPORT.

Report by the Council to the Annual General Meeting to be held on 3 March 1925.

Meetings.—Since last annual meeting three meetings of Council have been held.

Incorporation of Architects in Scotland.—The Kalendar of the Incorporation for 1924-25 was duly issued to Fellows of the Chapter as hitherto.

Mr. Bennett Mitchell has been appointed and agreed to act as Auditor of professional accounts in the Chapter Territory.

Drawings sent in by competitors in connection with the Incorporation's prizes were on exhibition in Aberdeen in the Art Gallery, facilities having been kindly given by the Director and Committee of the Gallery.

R.I.B.A.—The Council has continued to keep in touch with the Royal Institute. Communications have been received from the Institute and considered by the Council on many matters, including prizes and studentships, architectural education, R.I.B.A. examinations, scale of charges, competitions and wages slips on tenders.

As in former years a selection of the R.I.B.A. prize drawings was exhibited, facilities for the Exhibition having again been kindly afforded by the Committee and Director of the Art Gallery. It is proposed to hold a similar exhibition in 1925.

Competitions.—The Society was asked by the Architects' and Surveyors' Assistants' Professional Organisation to support a protest by that body against the limitation of the competition for a new advanced school at Dundee to architects carrying on business on their own account; but the Council, while sympathising with the protest felt that Aberdeen Chapter had no standing in the matter and Dundee Chapter would be a more appropriate one to assist.

Apprentices.—The Council recommended that members of the Chapter should make it a condition of engaging any future apprentice that such apprentice should become a member of the appropriate section of the Chapter of the Incorporation of Architects in Scotland and that the members should pay the entrance fees, dues and annual subscriptions of the Incorporation in respect of such apprentices.

SOUTH WALES INSTITUTE OF ARCHITECTS.

The Annual General Meeting of the South Wales Institute of Architects was held at the Institute Rooms, No. 6, High Street, Cardiff, on Thursday evening, 26 March, when Mr. C. F. Ward, F.R.I.B.A., Borough Architect of Newport, Mon., was elected President for 1925-26.

Mr. Ward, in accepting office, referred to the indebtedness of the South Wales Institute of Architects to the retiring President, who during his three years' term of office, had expended valuable time and had carried out exceptionally useful work when attending the meetings of the R.I.B.A. Council in London.

The retiring President, Mr. Percy Thomas, O.B.E., F.R.I.B.A., in the course of his remarks referred to the greatly strengthened position of the South Wales Institute of recent years, owing largely to the fact that all the leading architects in the South Wales area were now enrolled as members.

He also referred to the recent absorption of the Society of Architects by the Royal Institute of British Architects, and to the effect this would have in strengthening the profession throughout the country.

In conclusion he pointed out the necessity for the continued interest of all members in the affairs of the Institute.

The Honorary Treasurer, Mr. H. Teather, F.R.I.B.A., in his report pointed out the strong financial position of the South Wales Institute, and referred to the proposed intentions of the Council to use the funds in hand for the assistance of the three Branches of the Institute in South Wales, so that the work of the Branches would be greatly facilitated.

The Council elected is as follows :—

President.—C. F. Ward, F.R.I.B.A.

Vice-Presidents.—Percy Thomas, O.B.E., F.R.I.B.A., C. S. Thomas, F.R.I.B.A.

Hon. Treasurer.—H. Teather, F.R.I.B.A.

Hon. Auditor.—E. H. Fawckner, F.R.I.B.A.

Hon. Librarian.—C. H. Kempthorne, Licentiate R.I.B.A.

Members.—CENTRAL BRANCH : A. C. Edwards, Licentiate R.I.B.A., W. S. Purchon, M.A., A.R.I.B.A., T. Alwyn Lloyd, F.R.I.B.A., J. Williamson, A.R.I.B.A., J. B. Wride, F. H. Heaven, A.R.I.B.A., G. H. Griffiths, R. H. Winder, M.A., A.R.I.B.A., J. A. Hallam. WESTERN BRANCH : J. Herbert Jones, F.R.I.B.A., H. C. Portsmouth, F.R.I.B.A., Edwin Smith, A.R.I.B.A., Sidney R. Crocker, Licentiate R.I.B.A., G. R. H. Rogers, O. S. Portsmouth, A.R.I.B.A. EASTERN BRANCH : R. Fisher, H. Jones, Licentiate R.I.B.A., W. Rosser, F.R.I.B.A., F. Swash, F.R.I.B.A.

Associates' Representatives.—T. E. Llewellyn, R. E. M. Coombes, Central Branch; George L. Crocker, Western Branch; J. E. Lenton, Eastern Branch.

THE BERKS, BUCKS AND OXON ARCHITECTURAL ASSOCIATION

COUNCIL MEETING HELD 20 MARCH, 1925.

Work by Public Officials.—The attention of the Council was drawn to the appointment of a Sanitary Inspector as Architect to a Council Housing Scheme, and it was resolved to send particulars to the Allied Societies Conference and Ministry of Health.

Assistants' Salaries.—The Council resolved that "It was undesirable and impracticable to endeavour to fix minimum salaries for assistants in the provinces."

New President.—Mr. H. S. Rogers, M.A., F.S.A., F.R.I.B.A., was nominated for election as President at the Annual General Meeting.

THE CITY CHURCHES.

On the recommendation of the Art Standing Committee it was decided to take special steps to direct public attention to the threat to the City Churches.

THE BOMBAY ARCHITECTURAL ASSOCIATION.

The Bombay Architectural Association was admitted as an Allied Society of the R.I.B.A. under the provisions of Bye-laws 81 to 85.

LONDON STREET ARCHITECTURE.

AWARD FOR 1924.

The Jury appointed by the Royal Institute of British Architects to award a medal to the Architect who has designed the best street frontage completed during the year 1924 within a radius of four miles from Charing Cross has just completed its task.

After careful examination of drawings and photographs of all the buildings which were nominated for the honour, the Jury has given its award in favour of :

The Auctioneers' and Estate Agents' Institute, 29 Lincoln's Inn Fields, W.C.

designed by Messrs. Greenaway and Newberry, FF.R.I.B.A., of Parliament Mansions, Victoria Street, S.W.1.

The jury consists of :

The Earl of Crawford and Balcarres, K.T., P.C., Hon. F.R.I.B.A. (Chairman).

Mr. J. Alfred Gotch, F.S.A., President of the Royal Institute of British Architects.

Sir Edwin Lutyens, R.A., F.R.I.B.A.

Mr. E. Guy Dawber, F.S.A., F.R.I.B.A.

Mr. Walter Tapper, F.R.I.B.A.

R.I.B.A. FINAL EXAMINATION : PROBLEMS IN DESIGN.

ALTERNATIVE SUBJECT TO NO. LXXXIV (A).

(*A Design for a Garage.*)

The attention of candidates is drawn to the following alternative subject No. LXXXIV (A) (2) :—

A local authority wish to carry out a housing scheme on a site of 12½ acres having a frontage of 600 feet to a main road on the S.E. side of the site, leading out of the town. The road has a slight curve giving a concave frontage, and the land rises from the road at an even slope of about 1 in 25.

Sites are to be arranged for 100 cottages, 8 shops, a small institute and a church. A recreation ground of appropriate size should be provided.

The site may be developed with light roads not providing for any through traffic to the land beyond.

Drawings required.—A block plan to a scale of $\frac{1}{500}$ showing the intended position of all buildings, roads, recreation grounds, etc.

Complete plans, elevations, sections, of one of the groups of cottages, shown on the block plan, containing not less than 3 or not more than 4 dwellings, to ⅛ inch scale.

All the dwellings to be of such sizes and accommodation as would be eligible for the grants under the 1924 Housing Act.

Plans of the ground and first floors only of three other types of cottage, indicating the aspects for which they are intended to ⅛ inch scale.

THE REGISTRATION COMMITTEE.

Mr. C. McArthur Butler was appointed Secretary of the Registration Committee.

REINSTATEMENT.

Mr. Dodgshun was reinstated as a Licentiate.

Notice to Members

WAGES SLIPS ON TENDERS.

In 1924 the National Federation of Building Trades Employers found it necessary, owing to the conditions in the Building Industry at the time, to instruct their members to affix to all Tenders a Slip providing for adjustments to be made in the event of a rise or fall in wages. After conferences had been held, the R.I.B.A. agreed to the proposal subject to certain conditions which all members of both bodies were recommended to accept.

The arrangement made in 1924 expired on 25th March 1925. The position has again been reviewed in conference with the National Federation of Building Trades Employers, as a result of which it has been agreed by the Executives of the R.I.B.A. and the National Federation to continue the arrangement made in 1924 for a further 12 months until 25th March 1926.

Members of the R.I.B.A. are therefore requested to note, and are recommended by the Council of the Institute to carry out, the conditions attaching to the arrangement which has been reached having regard to the conditions in the Industry at the present time and in full realisation of the fact that it is undesirable to perpetuate it. The conditions are as follows :—

(*a*) That if any Slips are attached to tenders they should provide only for actual wage increases or decreases to men employed by the contractors or sub-contractors at the agreed standard rates and paid by the hour, and not for the inclusion of overhead charges or profit, upon such increases as well.

(*b*) That the Slips shall not be affixed to tenders up to £2,500 provided that in the case of tenders below £2,500 a provisional sum shall be included equal to 2½ per cent. on the total tender out of which the above increases to men paid by the hour are to be met, but such provisional sum in any event shall not be exceeded.

ARCHITECTS' BENEVOLENT SOCIETY.

SCHEME OF INSURANCE.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

Notices

THE TWELFTH GENERAL MEETING.

The Twelfth General Meeting (Ordinary) of the Session 1924-25 will be held on Monday, 20 April 1925, at 8 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on 30 March 1925 ; formally to admit members attending for the first time since their election or transfer.

To read the following paper, " Natural and Artificial Lighting," by Mr. Percy J. Waldram [*L.*].

NOTICES (continued)

ARCHITECTURE AND THE CRAFTS.

The remaining lectures of the series are as follows :—

Tuesday, 21 April, at 5 p.m., " Metal Work," by Mr. R. Ll. Rathbone.

Thursday, 30 April, at 5 p.m., " Mural Painting," by Mr. John D. Batten.

The lectures are open free to the general public, and in certain cases will be associated with exhibitions of examples of the crafts which form the subjects of the lectures.

VISIT TO ADELAIDE HOUSE.

A visit has been arranged by the Art Standing Committee to take place on Saturday afternoon, 18 April, to Adelaide House, London Bridge (Sir John J. Burnet and Partners, Architects). Members desirous of taking part are requested to make early application to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

THE ANNUAL DINNER 1925.

It has been decided by the Council that the Annual Dinner of 1925 is to be held on Tuesday, 12 May, at 6.30 for 7 p.m., at the Trocadero Restaurant, Piccadilly Circus, W.1. A number of distinguished guests are expected, and it is hoped that a large number of members will be able to be present.

The price of tickets is £1 11s. 6d. for Members and for Members' guests (inclusive of wines and cigars). It would be a convenience if Members would kindly give the names of their guests when applying for tickets. All applications, with cheques, should be addressed to the Secretary.

Early application would greatly facilitate the arrangements ; and if Members would send an intimation to the Secretary some days beforehand as to the friends near whom they desire to sit, every endeavour will be made, when arranging the plan of the tables, to meet their wishes as far as possible.

THE CITY CHURCHES.

It is proposed to arrange an Exhibition of Drawings and photographs of the Churches in the City of London during the week beginning 11 May 1925, in the R.I.B.A. Galleries.

The Committee in charge of the arrangements would be glad to receive from Members the loan of any drawings suitable for exhibition. Drawings so lent will be insured and returned, carriage paid.

NOTICE TO LICENTIATES.

The programme of the Examination of Licentiates desiring to qualify for candidature as Fellows is ready and may be obtained on application to the Secretary R.I.B.A., 9 Conduit Street, W.1. The first Examination will take place on 13, 14, 15 and 16 May 1925, and the application form, accompanied by the necessary Drawings and Photographs, must be sent in on or before Saturday, 25 April 1925.

EXHIBITION OF SKETCHES BY MR. T. RAFFLES DAVISON, HON. A.R.I.B.A.

Pen, pencil and pastel sketches from the countryside by Mr. T. Raffles Davison, Hon. A.R.I.B.A., will be exhibited in the galleries of the Royal Institute of British Architects, 9 Conduit Street, London, W.1, from 16 April to 28 April. Altogether about one thousand sketches will be shown, forming a small part of the artist's output during some forty years. They illustrate a great variety of subjects including studies of pastoral landscape. The artist's chief wish in the exhibition is that they may convey some share of that pleasure and interest to others which he has enjoyed in their production. The exhibition will be open free to the public between the hours of 10 a.m. and 8 p.m. (Saturdays 5 p.m.).

THE NEW CHARTER AND BYELAWS : AMENDMENT TO BYELAW 29.

By order of the Privy Council dated 24 March 1925 the addition of the following words to Byelaw 29 (Constitution of the Council) was approved :—

" (*g*) The Chairman of the Board of Architectural Education being a Fellow of the Royal Institute."

Election of Members

8 JUNE 1925.

The following applications for election have been received. Notice of any objection or other communication respecting the candidates must be sent to the Secretary for submission to the Council prior to Monday, 4 May 1925 :—

AS FELLOWS (14).

ADAMS : PERCY TIDSWELL [*A.* 1909], Imperial Bank Building, Prince Street, Colombo, Ceylon.

BEST : HALSTEAD [*A.* 1925], St. John's Chambers, 87 Church Street, Blackpool ; 46 Read's Avenue, Blackpool.

DUNN : HERBERT HENRY [*A.* 1896], County Hall, Cambridge ; The Woodlands, Great Shelford, Cambs.

GLENCROSS : LESLIE HAROLD [*A.* 1919], 2 John Street, Bedford Row, W.C. ; " Bostraze," Hill Close, Harrow-on-the-Hill.

GUTHRIE : LEONARD ROME, M.C., M.R.I. [*A.* 1910], 37 Bruton Street, W.1 ; 3 Caithness Road, Brook Green, W.

HOBSON : CAPTAIN JOSEPH REGINALD, M.C. [*A.* 1907], Public Works Department, Southern Rhodesia ; Salisbury Club, Salisbury, Rhodesia.

HOLT : HAROLD GUY [*A.* 1908], Windsor House, 46 Victoria Street, Westminster, S.W.1 ; 9 Sutton Court, Chiswick, W.4.

SWANNELL : CHARLES MALCOLM [*A.* 1911], 1 Broad Street Buildings, Liverpool Street, E.C.2 ; 48 Alexander Park Road, Muswell Hill, N.

THOMPSON : MORRIS [*A.* 1910], Carbon Chambers, Hall Gate, Doncaster ; Bawtry Road, Doncaster.

TRENCH : GILBERT MACKENZIE, F.S.I. [*A.* 1908], Police Architect and Surveyor, New Scotland Yard, S.W.1 ; " Grassington," Foxley Lane, Purley, Surrey.

WALKER : EDWARD HOLSWORTH [*A.* 1906], Carbon Chambers, Hall Gate, Doncaster ; " Sandilands," Bessaca, near Doncaster.

WALKER : MARSHALL EYRE [*A.* 1911], 21 Suffolk Street, Pall Mall East, S.W.1 ; Updene, West Hill Road, Woking, Surrey.

WARD : BERNARD MICHAEL [*A.* 1906], 3 Lord Street, Liverpool ; 88 Upton Road, Birkenhead.

WELCH : ROLAND [*A.* 1908], 20 and 22 Maddox Street, W.1 ; 12 Constable Close, Hampstead Garden Suburb, N.W. 11.

AS ASSOCIATES (5).

ASHBURNER : EDWARD HEATHCOTT, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 5 Fairfield Road, Stockton Heath, Warrington.

BLOODWORTH : CHARLES THOMAS, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 138 Derby Lane, Stoneycroft, Liverpool.

JENKINS : WILLIAM VICTOR, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 20 Manville Road, Wallasey, Cheshire.

MAW : SAMUEL HERBERT [*Final Examination*], 274 Beaver Hall Hill, Montreal, Canada.

VELARDE : FRANCIS XAVIER [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 16 Withert Avenue, Higher Bebington, Cheshire.

AS HON. ASSOCIATES (4).

DEARMER : THE REV. PERCY, M.A., D.D., Professor of Ecclesiastical Art and Lecturer in Art, King's College, University of London ; 9 Embankment Gardens, Chelsea, S.W.3.

EARLE : SIR LIONEL, K.C.B., K.C.V.O., C.M.G., J.P., 14 Sloane Gardens, S.W.

SHAW : EVELYN CAMPBELL, M.V.O., 39 Gilston Road, S.W.10.

TURNER : LAURENCE ARTHUR, F.S.A., 56 Doughty Street, W.C.1.

Competitions

PROPOSED REBUILDING OF THE ENGLISH BAPTIST CHURCH, PONTLOTTYN.

The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competition are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

NATIONAL COMMEMORATIVE WAR MONUMENT.

To be erected on Connaught Place, Ottawa, Canada. Closing date for receiving designs, 11 June 1925. Assessors Henry Sproatt, LL.D., R.C.A., Herman A. MacNeil, N.A., F. J. Shepherd, M.D., C.M., LL.D. Total cost not to exceed $100,000. Apply to the Secretary, Department of Public Works, Ottawa, Canada.

PROPOSED PRESBYTERIAN CHURCH AT CHEAM, SURREY.

The Competitions Committee desire to call the attention of Members to the fact that the Conditions of the above Competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the Competition.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

STOCKSBRIDGE PUBLIC SWIMMING BATHS COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published regulations of the Royal Institute for Architectural Competitions

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

COMPETITIONS (continued)

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

TECHNICAL COLLEGE, MIDDLESBROUGH.

The conditions of the above Competition have been submitted to the Competitions Committee of the R.I.B.A., and are found to be in accordance with the Regulations of the R.I.B.A.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

MASONIC MEMORIAL COMPETITION.

Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

Members' Column

DISSOLUTION OF PARTNERSHIP.

THE partnership existing between Sir Hugh Thomas and D. Frank Ingleton has been dissolved, owing to the death of the former. The practice of Thomas & Ingleton, of Victoria Place, Haverfordwest, has been acquired by D. Frank Ingleton, M.C., L.R.I.B.A., who will continue to practise at the above address in his own name. All assets and liabilities have been assumed by the said D. Frank Ingleton.

PARTNERSHIP WANTED.

WELL experienced and practised Associate with own office, now temporarily in a Government Department, would welcome any proposal to get free and going again in private practice. Capital available.—Apply Box 122, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

SECRETARY AND ACCOUNTANT RECOMMENDED.

F.R.I.B.A. strongly recommends a secretary and accountant specially trained in architect's offices who is desirous of taking a similar post.—Apply Box 2635, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

OFFICE TO LET.

UNFURNISHED office to let on second floor of new building, close to the Army & Navy Stores, Westminster, S.W. Suitable for a young architect commencing practice. Rent £52 per annum, ordinary cleaning extra.—Apply Box 2652, c/o Secretary R.I.B.A. 9 Conduit Street, W.1.

FLAT TO LET.

A.R.I.B.A. (retired) has self-contained upper part of his house to let, suitable for residence and (or) offices. Near Gipsy Hill Station, and bus routes 3A and 2. Rent, £100 per annum inclusive. —Apply Box 8225, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

FLAT WANTED.

MEMBER would be very glad to hear of small unfurnished flat with bathroom to let in Kensington or Chelsea, with possession in September.—Apply Box 2735, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENT WANTED.

LICENTIATE of long experience in London available for temporary work. Working drawings of small houses, factories, banks, etc., Expert in steel construction. Qualified for district surveying. —Address Box 4211, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

AN architect and surveyor, skilled in all branches of his profession, is anxious to obtain an appointment. Highest references. —Apply Box 9254, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Minutes XI

At the Eleventh General Meeting (Ordinary) of the Session 1924–1925 held on Monday, 30 March 1925, at 8 p.m.

Mr. Edward P. Warren in the chair.

The attendance book was signed by 15 Fellows (including 2 Members of Council), 25 Associates (including 3 Members of Council), 9 Licentiates and a large number of visitors.

The Minutes of the Meeting held on 16 March 1925 having been taken as read, were confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of the following Members :—

The Most Hon. the Marquess Curzon of Kedleston, K.G. Elected Hon. Fellow 1904.
Lord Sheffield, elected Hon. Associate 1904.
William Ashford Hodges, elected Associate 1907.
Hubert Stanley Saunders, elected Associate 1881.

and it was *Resolved* that the regrets of the Royal Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election or transfer were formally admitted by the Chairman :—

E. Stone Collins [*F.*].
J. Herbert Pearson [*F.*].
G. R. Barnsley [*A.*].
W. Langcake [*A.*].
Val Bonella [*L.*].
John C. F. James [*L.*].
W. G. Farmer [*L.*].
F. Edward Jones [*L.*].
T. W. Moore [*L.*].
Arthur W. Tribe [*L.*].

Mr. A. Beresford Pite having read a paper on " The Architectural Treatment of Ferro-Concrete " and illustrated it by lantern slides, a discussion ensued, and on the motion of Sir E. Owen Williams, seconded by Professor William Rothenstein, Principal of the Royal College of Art, a vote of thanks was passed to Mr. Pite by acclamation and was briefly responded to.

The Meeting closed at 10.15 p.m.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

R.I.B.A. JOURNAL.

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